

かが繰り返して判断される。ここで、上述の勘定カテゴリが選択された場合には（S 6 0 8 : Y E S）、ステップ S 6 0 9 に進む。

【0 2 1 8】

ここで、本実施の形態では、勘定カテゴリとしては、ファイル作成ソフト、個人ファイルネット保管サービス、個人ライセンス付与サービス、電子ブック、電子マガジン、電子新聞、ビデオソフト、ミュージックソフト、ゲームソフト、Web TV・ラジオ番組、ナビゲーションソフト、ネット学習カリキュラムなどについての流通利用権を対象とする「仮想デスク」と、電子ブック、電子資料、ビデオ、学習用ソフトなどについての流通利用権を対象とする「仮想図書館」と、重要書類ネット保管アプリケーション（約款、契約書、遺言書など）、各種資産口座（銀行、株式投資信託、保険、クレジットカードなど）、資産管理サービス（アプリケーションレンタルなど）などについての流通利用権を対象とする「仮想金庫」と、電子小切手、電子商品券、電子通貨、電子クーポン、電子チケット、電子パス、電子サービスポイントなどについての流通利用権を対象とする「仮想財布」と、電子郵便（電子メールではなく既存の郵便サービスを電子化したもの）、チャット・インスタントメッセージ（テキスト、ボイス）、電子会議室、IP電話、ピアツーピアなどについての流通利用権を対象とする「通信会話」と、複数の利用者によって共有する流通利用権を対象とする「共有」とを含んでいる。なお、勘定カテゴリは、購入または取得する形で設定することができる流通利用権を対象とするものであれば、任意に追加することができる。

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【0 2 1 4】

ステップ S 6 0 9 では、ステップ S 6 0 8 で選択された勘定カテゴリに含まれる新規購入取得可能な利用ライセンスモデルの一覧が表示される。そして、ステップ S 6 1 0 において、利用者によって新規購入を希望する利用ライセンスモデルが選択されたか否かが繰り返して判断される。ここで、新規購入を希望する利用ライセンスモデルが選択された場合には（S 6 1 0 : Y E S）、ステップ S 6 1 1 に進む。

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【0 2 1 5】

ステップ S 6 1 1 では、引出勘定 7 0 0 は、利用者に対して利用ライセンスモデルについての利用権購入取得量の入力を要求して、利用者によって入力された利用権購入取得量に基づいて、購入取得利用権代金を計算して合計金額を表示する。

【0 2 1 6】

ステップ S 6 1 2 では、流通利用権購入の取得を利用者に確認させた後で、引出勘定 7 0 0 から利用権サイト 3 0 0 に対して流通利用権の新規購入取得要求が供給される。すると、ステップ S 6 1 3 では、利用権口座管理サイト 4 0 0 において、選択された利用ライセンスモデルの新規購入が可能である状態であることを確認した後で、引出勘定 7 0 0 は、流通利用権の新規購入取得に際して、その代金を決済するために利用可能な代金決済手段の一覧を表示する。

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【0 2 1 7】

そして、ステップ S 6 1 4 において、利用者によって希望する代金決済手段が選択されたか否かが繰り返して判断される。ここで、希望する代金決済手段が選択された場合には（S 6 1 4 : Y E S）、ステップ S 6 1 5 に進む。

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【0 2 1 8】

ステップ S 6 1 5 では、引出勘定 7 0 0 は、購入取得利用権、購入取得代金および代金決済手段を利用者に確認させた後で、引出勘定 7 0 0 から利用権サイト 3 0 0 に対して代金決済の要求が供給され、そして、利用権サイト 3 0 0 は、利用者により選択された代金決済手段からの代金の決済実行可能である旨の応答を受信した後、代金決済手段に対して代金決済の要求が供給される。すると、ステップ S 6 1 6 において、代金決済手段において代金の決済が実行される。

【0 2 1 9】

その後、ステップ S 6 1 7 において、新規購入された流通利用権が流通利用権口座に設定されると共に、それに対応する利用メータが生成または初期化されて、処理が終了する。

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## 【0220】

＜流通利用権の引き出し＞

次に、本実施の形態に係るデジタル著作物の管理システム1における「流通利用権の引き出し」に関する動作ステップを、図17に基づいて説明する。

## 【0221】

まず、ステップS701では、引出勘定700において、著作物の利用者によるアクセスがあるか否かが繰り返して判断される。ここで、アクセスがあった場合には（S701：YES）、ステップS702に進む。ステップS702では、引出勘定700においてメニューリストが表示される。従って、利用者は、メニューリストに表示されている動作のなかから希望する動作を選択することになる。

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## 【0222】

そして、ステップS703では、メニューリストの流通利用権の「引き出し」の項目が選択されたか否か、つまり、利用者が流通利用権の引き出しを要求しているか否かが繰り返して判断される。ここで、流通利用権の引き出し要求があった場合には（S703：YES）、ステップS704に進む。

## 【0223】

ステップS704では、これから引き出される流通利用権が格納される引出勘定帳が開錠されているか否かが判断される。ここで、引出勘定帳が開錠されている場合には、（S704：YES）、ステップS706に進む。

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## 【0224】

一方、引出勘定帳が開錠されていない場合には、（S704：NO）、ステップS705に進む。ステップS705では、利用権口座ユーザ認証情報によって引出勘定700に開錠された引出勘定帳の利用者の確認が行われる。つまり、引出勘定700は、利用者に対して利用権口座ユーザ認証情報の入力を要求して、利用者によって入力された利用権口座ユーザ認証情報に基づいて、引出勘定700に開錠された引出勘定帳を利用可能な利用者であるかを確認する。また、ユーザ認証情報によって引出勘定700の利用者の確認が行われる。つまり、引出勘定700は、利用者に対してユーザ認証情報の入力を要求して、利用者によって入力されたユーザ認証情報に基づいて、管理システム1にアクセス可能な利用者であるかを確認する。その後、ステップS706に進む。

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## 【0225】

そして、引出勘定700は、勘定帳が開錠されている場合およびユーザ認証情報および利用権口座ユーザ認証情報に基づく利用者の確認が終了した場合には、ステップS706において、引出勘定700から利用権口座管理サイト400に対して流通利用権の引き出し要求が供給される。

## 【0226】

ステップS707では、引出勘定700は、利用権口座管理サイト400からの流通利用権の引き出し受け付け可能である旨の応答を受信した後、引き出し可能な流通利用権を含む勘定カテゴリの一覧が表示される。そして、ステップS708において、利用者によって引き出しを希望する流通利用権を含む勘定カテゴリが選択されたか否かが繰り返して判断される。ここで、上述の勘定カテゴリが選択された場合には（S708：YES）、ステップS709に進む。

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## 【0227】

ステップS709では、ステップS708で選択された勘定カテゴリに含まれる引き出し可能な流通利用権の一覧が表示される。そして、ステップS710において、利用者によって引き出しを希望する流通利用権が選択されたか否かが繰り返して判断される。ここで、引き出しを希望する流通利用権が選択された場合には（S710：YES）、ステップS711に進む。

## 【0228】

ここで、複数の利用者によって共有されている流通利用権を引き出す場合には、ステップS708で共有勘定カテゴリを選択すると、共有勘定カテゴリに設定された引き出し可能

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な共有の流通利用権の一覧が表示される。従って、利用者は、そのなかから引き出しを希望する共有の流通利用権を選択してもよい。

【0229】

ステップS711では、引出勘定700から利用権口座管理サイト400に対して流通利用権の引き出し実行要求が供給される。すると、ステップS712では、利用権口座管理サイト400において、選択された流通利用権の引き出しが可能である状態であることを確認した後で、その流通利用権を利用権口座において非アクティブ化する。

【0230】

そして、ステップS713において、利用者によって選択された流通利用権が借り利用権であるか否かが判断される。ここで、借り利用権でない場合には（S713：NO）、ステップS714に進む。ステップS714では、上述で引き出された流通利用権に対応する利用メタオブジェクトが生成される。そして、ステップS715において、引出勘定700は、利用権口座管理サイト400からの流通利用権の引き出し実行可能である旨の応答を受信した後、引出勘定700に引き出された流通利用権に対応する使用利用権に対して、利用メタオブジェクトへの参照情報を含む利用メタオブジェクトへの参照である使用利用権が設定される。また、ステップS716では、引出勘定700からコンテンツサイト200への使用利用権に対応するコンテンツファイルの送信要求が供給される。

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【0231】

一方、借り利用権である場合には（S713：YES）、ステップS717に進む。ステップS717では、上述で引き出された流通利用権に対応する利用メタオブジェクトおよび貸出メタオブジェクトが生成される。そして、ステップS718において、引出勘定700は、利用権口座管理サイト400からの借り利用権の引き出し実行可能である旨の応答を受信した後、引出勘定700に引き出された借り利用権に対応する借り使用利用権に対して、利用メタオブジェクトおよび貸出メタオブジェクトへの参照情報を含む利用メタオブジェクトおよび貸出メタオブジェクトへの参照である借り使用利用権が設定される。また、ステップS719では、引出勘定700からコンテンツサイト200への借り使用利用権に対応するコンテンツファイルの送信要求が供給される。

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【0232】

その後、ステップS720において、使用利用権または借り使用利用権に対応するコンテンツファイルがコンテンツサイト200から引出勘定700にダウンロードされる。

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【0233】

そして、ステップS721において、引出勘定700では、引出勘定700にダウンロードされたコンテンツファイルを設定して、それに対応する使用利用権または借り使用利用権に対してコンテンツファイルの参照情報を含むコンテンツファイルへの参照が設定されて、処理が終了する。

【0234】

<流通利用権の預け入れ>

次に、本実施の形態に係るデジタル著作物の管理システム1における「流通利用権の預け入れ」に関する動作ステップを、図18に基づいて説明する。

【0235】

まず、ステップS801では、引出勘定700において、著作物の利用者によるアクセスがあるか否かが繰り返して判断される。ここで、アクセスがあった場合には（S801：YES）、ステップS802に進む。ステップS802では、引出勘定700においてメニューリストが表示される。従って、利用者は、メニューリストに表示されている動作のなかから希望する動作を選択することになる。

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【0236】

そして、ステップS803では、メニューリストの流通利用権の「預け入れ」の項目が選択されたか否か、つまり、利用者が流通利用権の預け入れを要求しているか否かが繰り返して判断される。ここで、流通利用権の預け入れ要求があった場合には（S803：YES）、ステップS804に進む。すると、ステップS804では、引出勘定700では預

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け入れ可能な使用利用権の一覧が表示される。

【0237】

そして、ステップS805において、利用者によって預け入れを希望する使用利用権が選択されたか否かが繰り返して判断される。ここで、預け入れを希望する使用利用権が選択された場合には（S805：YES）、ステップS806に進む。

【0238】

ステップS806では、引出勘定700から利用権口座管理サイト400に対して使用利用権の預け入れ実行要求が供給される。すると、ステップS807では、利用権口座管理サイト400において、選択された使用利用権の預け入れが可能である状態であることを確認した後で、引出勘定700は、その使用利用権を引出勘定帳において非アクティブ化する。

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【0239】

そして、ステップS808では、流通利用権口座に預け入れられた使用利用権に対応する利用メタオブジェクトが破壊される。引き続き、ステップS809において、流通利用権口座に預け入れられた使用利用権に対応する流通利用権をアクティブ化することにより回復させる。その後、引出勘定帳において非アクティブ化した使用利用権およびそれに対応するコンテンツファイルが削除されて、処理が終了する。

【0240】

<流通利用権の貸し出し>

次に、本実施の形態に係るデジタル著作物の管理システム1における「流通利用権の貸し出し」に関する動作ステップを、図19に基づいて説明する。

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【0241】

まず、ステップS901では、引出勘定700において、著作物の利用者によるアクセスがあるか否かが繰り返して判断される。ここで、アクセスがあった場合には（S901：YES）、ステップS902に進む。ステップS902では、引出勘定700においてメニューリストが表示される。従って、利用者は、メニューリストに表示されている動作のなかから希望する動作を選択することになる。

【0242】

そして、ステップS903では、メニューリストの流通利用権の「貸し出し」の項目が選択されたか否か、つまり、利用者が流通利用権の貸し出しを要求しているか否かが繰り返して判断される。ここで、流通利用権の貸し出し要求があった場合には（S903：YES）、ステップS904に進む。

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【0243】

ステップS904では、これから貸し出す流通利用権が格納される引出勘定帳が開錠されているか否かが判断される。ここで、引出勘定帳が開錠されている場合には（S904：YES）、ステップS906に進む。

【0244】

一方、引出勘定帳が開錠されていない場合には、（S904：NO）、ステップS905に進む。ステップS905では、利用権口座ユーザ認証情報によって引出勘定700に開錠された引出勘定帳の利用者の確認が行われる。つまり、引出勘定700は、利用者に対して利用権口座ユーザ認証情報の入力を要求して、利用者によって入力された利用権口座ユーザ認証情報に基づいて、引出勘定700に開錠された引出勘定帳を利用可能な利用者であるかを確認する。また、ユーザ認証情報によって引出勘定700の利用者の確認が行われる。つまり、引出勘定700は、利用者に対してユーザ認証情報の入力を要求して、利用者によって入力されたユーザ認証情報に基づいて、管理システム1にアクセス可能な利用者であるかを確認する。その後、ステップS906に進む。

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【0245】

そして、引出勘定700は、引出勘定帳が開錠されている場合およびユーザ認証情報および利用権口座ユーザ認証情報に基づく利用者の確認が終了した場合には、ステップS906において、引出勘定700から利用権口座管理サイト400に対して流通利用権の貸し

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出し要求が供給される。

【0246】

ステップS907では、引出勘定700は、利用権口座管理サイト400からの流通利用権の貸し出し受け付け可能である旨の応答を受信した後、貸し出し可能な流通利用権の一覧を表示する。

【0247】

そして、ステップS908において、利用者によって貸し出しを希望する流通利用権が選択されたか否かが繰り返して判断される。ここで、貸し出しを希望する流通利用権が選択された場合には（S908：YES）、ステップS909に進む。

【0248】

ステップS909では、引出勘定700は、利用者に対して流通利用権貸し出し量および貸し出し先の入力を要求して、利用者によって流通利用権貸し出し量および貸し出し先が入力される。

【0249】

ステップS910では、利用権貸し出し（利用権貸し出し量および貸し出し先）を利用者に確認させた後で、引出勘定700から利用権口座管理サイト400に対して流通利用権の貸し出し実行要求が供給される。すると、ステップS911では、利用権口座管理サイト400において、選択された流通利用権の貸し出しが可能である状態であることを確認した後で、貸し出し先の流通利用権口座の借り利用権勘定に借り流通利用権が設定されると共に、それに対応する貸出メータが生成または初期化される。その後、ステップS912において、貸し出し元の流通利用権口座の貸し出し流通利用権が非アクティブ化されて、処理が終了する。

【0250】

<流通利用権の譲渡>

次に、本実施の形態に係るデジタル著作物の管理システム1における「流通利用権の譲渡」に関する動作ステップを、図20に基づいて説明する。

【0251】

まず、ステップS1001では、引出勘定700において、著作物の利用者によるアクセスがあるか否かが繰り返して判断される。ここで、アクセスがあった場合には（S1001：YES）、ステップS1002に進む。ステップS1002では、引出勘定700においてメニューリストが表示される。従って、利用者は、メニューリストに表示されている動作のなかから希望する動作を選択することになる。

【0252】

そして、ステップS1003では、メニューリストの流通利用権の「譲渡」の項目が選択されたか否か、つまり、利用者が流通利用権の譲渡を要求しているか否かが繰り返して判断される。ここで、流通利用権の譲渡要求があった場合には（S1003：YES）、ステップS1004に進む。

【0253】

ステップS1004では、これから譲渡する流通利用権が格納される引出勘定帳が開錠されているか否かが判断される。ここで、引出勘定帳が開錠されている場合には（S1004：YES）、ステップS1006に進む。

【0254】

一方、引出勘定帳が開錠されていない場合には、（S1004：NO）、ステップS1005に進む。ステップS1005では、利用権口座ユーザ認証情報によって引出勘定700に開錠された引出勘定帳の利用者の確認が行われる。つまり、引出勘定700は、利用者に対して利用権口座ユーザ認証情報の入力を要求して、利用者によって入力された利用権口座ユーザ認証情報に基づいて、引出勘定700に開錠された引出勘定帳を利用可能な利用者であるかを確認する。また、ユーザ認証情報によって引出勘定700の利用者の確認が行われる。つまり、引出勘定700は、利用者に対してユーザ認証情報の入力を要求して、利用者によって入力されたユーザ認証情報に基づいて、管理システム1にアクセス

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可能な利用者であるかを確認する。その後、ステップ S 1 0 0 6 に進む。

【0255】

そして、引出勘定 7 0 0 は、引出勘定帳が開錠されている場合およびユーザ認証情報および利用権口座ユーザ認証情報に基づく利用者の確認が終了した場合には、ステップ S 1 0 0 6 において、引出勘定 7 0 0 から利用権口座管理サイト 4 0 0 に対して流通利用権の譲渡要求が供給される。

【0256】

ステップ S 1 0 0 7 では、引出勘定 7 0 0 は、利用権口座管理サイト 4 0 0 からの流通利用権の譲渡受け付け可能である旨の応答を受信した後、譲渡可能な流通利用権の一覧を表示する。

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【0257】

そして、ステップ S 1 0 0 8 において、利用者によって譲渡を希望する流通利用権が選択されたか否かが繰り返して判断される。ここで、譲渡を希望する流通利用権が選択された場合には (S 1 0 0 8 : YES)、ステップ S 1 0 0 9 に進む。

【0258】

ステップ S 1 0 0 9 では、引出勘定 7 0 0 は、利用者に対して利用権譲渡先の入力を要求して、利用者によって利用権譲渡先が設定される。

【0259】

ステップ S 1 0 1 0 では、利用権譲渡 (譲渡利用権および譲渡先) を利用者に確認させた後で、引出勘定 7 0 0 から利用権口座管理サイト 4 0 0 に対して流通利用権の譲渡実行要求が供給される。すると、ステップ S 1 0 1 1 では、利用権口座管理サイト 4 0 0 において、選択された流通利用権の譲渡が可能である状態であることを確認した後で、譲渡元の流通利用権口座から譲渡先の流通利用権口座への流通利用権の移動 (口座振替) が行われて、処理が終了する。

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【0260】

<共有グループの設定>

次に、本実施の形態に係るデジタル著作物の管理システム 1 における「共有グループの設定」に関する動作ステップを、図 2 1 に基づいて説明する。

【0261】

まず、ステップ S 1 1 0 1 では、引出勘定 7 0 0 において、著作物の利用者によるアクセスがあるか否かが繰り返して判断される。ここで、アクセスがあった場合には (S 1 1 0 1 : YES)、ステップ S 1 1 0 2 に進む。ステップ S 1 1 0 2 では、引出勘定 7 0 0 においてメニューリストが表示される。従って、利用者は、メニューリストに表示されている動作のなかから希望する動作を選択することになる。

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【0262】

そして、ステップ S 1 1 0 3 では、メニューリストの「共有」の「グループ設定」の項目が選択されたか否か、つまり、利用者が共有グループの設定を要求しているか否かが繰り返して判断される。ここで、共有グループの設定要求があった場合には (S 1 1 0 3 : YES)、ステップ S 1 1 0 4 に進む。

【0263】

ステップ S 1 1 0 4 では、ユーザ認証情報によって引出勘定 7 0 0 にアクセスした利用者の確認が行われる。つまり、引出勘定 7 0 0 は、利用者に対してユーザ認証情報の入力を要求して、利用者によって入力されたユーザ認証情報に基づいて、管理システム 1 にアクセス可能な利用者であるかを確認する。

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【0264】

そして、引出勘定 7 0 0 は、ユーザ認証情報に基づく利用者の確認が終了すると、ステップ S 1 1 0 5 において、引出勘定 7 0 0 から利用権口座管理サイト 4 0 0 に対して共有グループ設定要求が供給される。

【0265】

ステップ S 1 1 0 6 では、引出勘定 7 0 0 は、利用権口座管理サイト 4 0 0 からの共有グ

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ループの設定受け付け可能である旨の応答を受信した後、共有グループ名および共有者の流通利用権口座ID（共有メンバー）が設定される。つまり、引出勘定700は、利用者に対して共有グループ名および共有者の流通利用権口座IDの入力を要求して、利用者によって入力された共有グループ名および共有者の流通利用権口座IDに基づいて設定される。

#### 【0266】

ステップS1107では、引出勘定700は、共有グループ名、共有者の流通利用権口座IDおよび共有グループ確定を利用者に確認させた後で、引出勘定700から利用権口座管理サイト400に対して共有グループ設定実行要求が供給される。すると、ステップS1108で、利用権口座管理サイト400において、共有グループの設定が可能である状態であることを確認した後で、先に確認された共有者に対して流通利用権の共有グループ口座が開設される。その後、利用権口座管理サイト400では、共有者のそれぞれの共有勘定に共有グループ口座への参照が設定されて、処理が終了する。

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#### 【0267】

＜流通利用権の共有設定＞

次に、本実施の形態に係るデジタル著作物の管理システム1における「流通利用権の共有設定」に関する動作ステップを、図22に基づいて説明する。

#### 【0268】

まず、ステップS1201では、引出勘定700において、著作物の利用者によるアクセスがあるかが繰り返して判断される。ここで、アクセスがあった場合には（S1201：YES）、ステップS1202に進む。ステップS1202では、引出勘定700においてメニューリストが表示される。従って、利用者は、メニューリストに表示されている動作のなかから希望する動作を選択することになる。

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#### 【0269】

そして、ステップS1203では、メニューリストの「共有」の「利用権設定」の項目が選択されたか否か、つまり、利用者が流通利用権の共有設定を要求しているか否かが繰り返して判断される。ここで、流通利用権の共有設定要求があった場合には（S1203：YES）、ステップS1204に進む。

#### 【0270】

ステップS1204では、ユーザ認証情報によって引出勘定700にアクセスした利用者の確認が行われる。つまり、引出勘定700は、利用者に対してユーザ認証情報の入力を要求して、利用者によって入力されたユーザ認証情報に基づいて、管理システム1にアクセス可能な利用者であるかを確認する。

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#### 【0271】

そして、引出勘定700は、ユーザ認証情報に基づく利用者の確認が終了すると、ステップS1205において、引出勘定700から利用権口座管理サイト400に対して流通利用権の共有設定要求が供給される。

#### 【0272】

ステップS1206では、引出勘定700は、利用権口座管理サイト400からの流通利用権の共有設定受け付け可能である旨の応答を受信した後、共有グループの一覧が表示される。そして、ステップS1207において、利用者によって共有を希望する流通利用権が格納される共有グループが選択されたか否かが繰り返して判断される。ここで、上述の共有グループが選択された場合には（S1207：YES）、ステップS1208に進む。

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#### 【0273】

ステップS1208では、ステップS1207で選択された共有グループにおいて共有可能な流通利用権の一覧が表示される。そして、ステップS1209において、利用者によって共有を希望する流通利用間が選択されたか否かが繰り返して判断される。ここで、共有を希望する流通利用権が選択された場合には（S1209：YES）、ステップS1210に進む。

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## 【0274】

ステップS1210では、引出勘定700は、流通利用権の共有設定を利用者に確認させた後で、引出勘定700から利用権口座管理サイト400に対して流通利用権の共有設定実行要求が供給される。すると、ステップS1211で、利用権口座管理サイト400において、指定された流通利用権の提供が可能である状態であることを確認した後で、先に選択された共有グループに対して指定された流通利用権が提供される。その後、利用権口座管理サイト400では、共有グループに対して提供された流通利用権が流通利用権口座において非アクティブ化されて、その流通利用権が共有グループ口座に設定されて、処理がする。

## 【0275】

以上のように、本実施の形態のデジタル著作物の管理システム1によると、コンピュータ80の引出勘定700の利用者は、デジタル著作物についての利用可能な権利範囲を示す利用ライセンスデータおよびそれについての利用ライセンスデータテーブル（利用限度データおよび利用計測データを含む）を有する利用メータに対しては直接アクセスすることなく、利用メータへの参照情報を含む流通利用権に対してのみアクセスすることによって、その流通利用権に対応するデジタル著作物を利用することができる。つまり、管理サーバ10とコンピュータ80の引出勘定700との間、管理サーバ10内の複数の利用者の利用権口座同士間、或いは、複数のコンピュータ80の引出勘定700間において、利用ライセンスデータ自体および利用メータ自体を流通させないで流通利用権を流通させるだけで、この流通利用権に対応するデジタル著作物の利用に相当する行為が可能となる。そのため、流通利用権の流通过程において、流通利用権に何らかのトラブルが発生した場合でも、利用ライセンスデータおよび利用メータは一切の損傷を受けることなく保護される。従って、特にデジタル著作物についての利用可能な範囲を示す一種の契約書のような機能を有する利用ライセンスデータの安全性を著しく向上させることができる。さらに、管理サーバから本端末装置に送信された利用メータオブジェクトに対する不正なアクセスを抑制することができる。これにより、使用利用権に対応するデジタル著作物のより安全な利用を促進することができると共に、利用者に対してより統一的な操作方法を提供することができる。

## 【0276】

また、上述したように、利用ライセンスデータおよび利用メータを流通と切り離して流通利用権だけを流通させることができるため、その流通利用権に対応する利用ライセンスデータおよび利用メータに対する改ざん、紛失、損傷、窃盗などの被害が発生するのを抑制することができる。これにより、利用ライセンスデータおよび利用メータが変質していないかどうか（利用ライセンスデータおよび利用メータの内容が改ざん等されていないかどうか）を適宜確認する負担が軽減されて、流通利用権の流通コストを低く抑えることができると共に、流通利用権のより自由な流通を促進することができる。

## 【0277】

さらに、利用ライセンスデータを流通と切り離すことによって、利用ライセンスデータの実装内容自体は利用者に対しては隠蔽されるようになる。従って、例えば利用ライセンスデータの実装内容に変更が生じた場合、または、デジタル著作物の利用形態に関して新しい利用形態が生じた場合においても、利用ライセンスデータの参照情報を含む流通利用権そのものの機能や仕様に変更が生じることがないため、利用者に対しては流通利用権に対する統一的な操作性を提供することができる。その結果、流通利用権に対する操作性の変更に伴って生じる利用者側の混乱や煩わしさを最小限に抑えることができる。

## 【0278】

また、管理サーバ10からコンピュータ80の引出勘定700に対しては、利用メータ自体は送信されないで、利用メータの少なくとも一部の複製物（コピー）である利用メータオブジェクトが送信されることにより、利用メータ自体を管理サーバ10内から外部へ送信する必要がなくなると、利用メータ自体を管理サーバ10外部における流通と完全に切り離すことができる。また、コンピュータ80の引出勘定700に対して送信した利用メ

ータオブジェクトによってデジタル著作物のコンピュータ30での利用量を計測して、その利用量計測データをコンピュータ30から受信することによって、利用メータの内容を適宜更新することができる。従って、デジタル著作物についての利用可能な権利範囲を示す利用ライセンスデータの内容を超過してデジタル著作物が利用されるのを防止することができる。さらに、利用メータのなかの一部（必要な部分）だけを複製した利用メータオブジェクトがコンピュータ30の引出勘定700に対して送信される場合には、利用メータ全体の複製物がコンピュータ30の引出勘定700に対して送信される場合と比較して、利用メータオブジェクトの送信に要する時間を低減することができるため、管理システム1の処理能力を向上させることができると共に、利用メータの安全性を向上させることもできる。

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**【0279】**

また、ある利用メータについて、利用メータオブジェクトが生成されると、その利用メータが更新されるまでは、その利用メータについての利用メータオブジェクトが新たに生成されないため、1つの利用メータに対応するデジタル著作物が複数の利用者によって同時に使用される（二重使用される）という不正利用を防止することができる。そのため、デジタル著作物についての利用可能な権利範囲を示す利用ライセンスデータの提供若しくは販売された量と利用者により使用される利用ライセンスデータの量を厳格に1対1に保持することができ、デジタル著作物が不正に利用されるのを確実に防止することができる。

**【0280】**

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また、利用メータ管理サイト500では、利用メータの更新記録が保存されるため、管理システム1における以前の利用記録を随時確認することができる。

**【0281】**

また、流通利用権に基づくデジタル著作物の利用量がそれに対応する利用ライセンスデータの利用可能な権利範囲を超過すると、その流通利用権とその流通利用権に対応する利用メータが破壊されるため、そのデジタル著作物の利用を確実に停止させることができる。

**【0282】**

また、デジタル著作物についての利用可能な権利範囲を示す利用ライセンスデータのうち、利用メータにおいて残存している権利範囲内で、他の利用者に対して、自己の有する流通利用権に対応する利用ライセンスデータに基づくデジタル著作物の利用可能な権利を貸し出すことが可能となる。従って、デジタル著作物の利用形態が多くなって、利用者の利便性が向上する。

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**【0283】**

また、流通利用権に対応する貸出データに基づくデジタル著作物の貸出利用量がそれに対応する貸出データの貸出利用可能な権利範囲を超過すると、その流通利用権に対応する貸出メータが破壊されると共に、その流通利用権の貸し出しが解消されるため、その流通利用権に対応する貸出データに基づくデジタル著作物の利用可能な権利の貸出を確実に停止させることができる。

**【0284】**

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また、貸出メータに含まれる貸出メータデータテーブルの少なくとも一部と同じデータを含む貸出管理用データテーブルが生成されて、それに対応する貸出メータを含む利用メータについての利用メータオブジェクトに設定されるため、流通利用権に対応する利用ライセンスデータに基づくデジタル著作物の貸出利用量の管理を確実にできる。従って、その流通利用権の貸し出しに基づくデジタル著作物の不正な貸出利用を防止することができる。

**【0285】**

また、流通利用権を複数の利用者の利用権口座間において移動させることができるため、複数の利用者間において、流通利用権の譲渡、交換、売買を実行することが可能になる。また、1つの流通利用権を複数の利用者によって共有させることができる。従って、ディ

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デジタル著作物の利用形態が多くなって、利用者の利便性が向上する。

【0286】

また、デジタル著作物の提供者は、利用ライセンスモデルを公開することによって、利用者に対して利用ライセンスモデルの形で多様な選択肢を提供することができ、利用者は、その利用ライセンスモデルのなかから必要に応じて内容を選択することにより希望する利用ライセンスデータを得ることが可能となる。

【0287】

また、利用ライセンスデータの生成数を計測して、その生成数に応じて、利用ライセンスモデルの公開が適宜停止或いは開始（再開）される。そのため、利用ライセンスデータの生成数に制限がある場合でも、利用ライセンスデータの生成数がその制限数を超過するのを防止することができる。

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【0288】

また、利用メタオブジェクトが、デジタル著作物の配置情報およびデジタル著作物の端末装置上での格納情報を含むデジタル著作物管理用データテーブルを有しているため、端末装置において利用ライセンスデータに応じたデジタル著作物を確実に利用することができる。

【0289】

また、コンピュータ30の引出勘定700では、利用メタに基づくデジタル著作物の利用量がその使用利用権に対応する利用ライセンスデータの利用可能な権利範囲を超過すると、その使用利用権およびそれに対応する利用メタオブジェクトが破壊されるため、そのデジタル著作物の利用を確実に停止させることができる。

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【0290】

また、コンピュータ30の引出勘定700では、貸出メタに基づいた流通利用権の貸出量が貸し出し可能な権利範囲を超過すると、その流通利用権に対応する使用利用権およびその使用利用権から参照される利用メタオブジェクトが破壊されるため、貸出データに基づくデジタル著作物の利用可能な権利の貸出を確実に停止させることができる。

【0291】

以上、本発明の好適な実施の形態について説明したが、本発明は上述の実施の形態に限られるものではなく、特許請求の範囲に記載した限りにおいて、様々な設計変更を行うことが可能なものである。例えば、上述の実施の形態では、端末装置であるコンピュータに対して配信されるデジタル著作物が格納されたデジタル著作物配信手段としての機能を有するコンテンツサイト200（コンテンツ管理部231）が管理サーバ10内に含まれる場合について説明しているが、これに限らず、デジタル著作物配信手段は管理サーバ内に含まれていなくてもよい。

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【0292】

また、上述の実施の形態では、利用権運用口座管理サイト100、コンテンツサイト200、利用権サイト300、利用権口座管理サイト400および利用メタ管理サイト500が同一のコンピュータ上に形成される場合について説明しているが、これに限らず、各サイトが、ネットワーク上に分散された複数のコンピュータ上に分散して形成されていてもよい。

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【0293】

また、上述の実施の形態では、利用対象がデジタル著作物である場合について説明しているが、これに限らず、利用対象は、デジタル著作物関連以外のものであってもよい。ここで、利用対象がデジタル著作物である場合には、コンテンツサイトから端末装置であるコンピュータ上の引出勘定に対して、デジタル著作物関連のコンテンツファイルが送信されるが、利用対象がデジタル著作物関連以外のものである場合には、コンテンツサイトから端末装置であるコンピュータ上の引出勘定に対して、使用利用権の妥当性を証明するための利用許可証のような機能を有する電子的ドキュメントが送信される。そして、この電子的ドキュメントがないと使用利用権を行使できないように構成されている。なお、利用対象がデジタル著作物関連以外のものである場合における管理システムの動作

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(電子的利用権としての流通利用権、使用電子的利用権としての使用利用権および利用対象のそれぞれの取り扱いを含む)は、利用対象がデジタル著作物関連のものである場合と同様である。

【0294】

また、電子的ドキュメントは、使用利用権が利用可能であるものであることを証明する情報またはデータを含んでいれば、どのような構成のものであってもよい。従って、電子的ドキュメントは、例えば何らかの識別情報であってもよい。また、利用対象がデジタル著作物関連以外のものである場合における利用ライセンスモデルも、本実施の形態と同様に、利用回数、利用時間、利用有効期限などで利用限度が設定される。そして、その設定に基づいて利用限度が管理され、その利用対象の利用量が計測される。

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【0295】

また、利用対象が、商品券やクーポン券のような各種金券である場合には、その利用は利用回数(通常は1回)で管理される。つまり、額面金額に応じて引き出す使用利用権の数(例えば所定額面金額の金券の枚数に対応する数)が指定されると、その指定枚数の金券が引き出される。そして、引き出された金券については、その額面金額の全てを使用するかしないかのいずれかである。このように、1回だけ利用することができるとは例えば金券のような利用対象の場合には、それを使用すると利用限度に達した場合の処理が行われる。また、複数回または一定期間内だけ利用することができるような例えば回数券や定期券のような利用対象の場合には、利用メタオブジェクトで管理される利用限度データに基づいて利用量が計測される。

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【0296】

【発明の効果】

以上説明したように、請求項1、18によると、端末装置の利用者は、利用対象についての利用可能な権利範囲を示す利用ライセンスデータおよびそれについての利用ライセンスデータテーブル(利用限度データおよび利用計測データを含む)を有する利用メタに対しては直接アクセスすることなく、利用メタへの参照情報を含む電子的利用権に対してのみアクセスすることによって、その電子的利用権に対応する利用対象を利用することができる。つまり、本管理サーバと端末装置との間、本管理サーバ内の複数の利用者の電子的利用権管理手段同士間、或いは、複数の端末装置間において、利用ライセンスデータ自体および利用メタ自体を流通させないで電子的利用権を流通させるだけで、この電子的利用権に対応する利用対象の利用に相当する行為が可能となる。そのため、電子的利用権の流通过程において、電子的利用権に何らかのトラブルが発生した場合でも、利用ライセンスデータおよび利用メタは一切の損傷を受けることなく保護される。従って、特に利用対象についての利用可能な範囲を示す一種の契約書のような機能を有する利用ライセンスデータの安全性を著しく向上させることができる。

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【0297】

また、上述したように、利用ライセンスデータおよび利用メタを流通と切り離して電子的利用権だけを流通させることができるため、その電子的利用権に対応する利用ライセンスデータおよび利用メタに対する改ざん、紛失、損傷、窃盗などの被害が発生するのを抑制することができる。これにより、利用ライセンスデータおよび利用メタが変質していないかどうか(利用ライセンスデータおよび利用メタの内容が改ざん等されていないかどうか)を適宜確認する負担が軽減されて、電子的利用権の流通コストを低く抑えることができると共に、電子的利用権のより自由な流通を促進することができる。

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【0298】

さらに、利用ライセンスデータを流通と切り離すことによって、利用ライセンスデータの実装内容自体は利用者に対しては隠蔽されるようになる。従って、例えば利用ライセンスデータの実装内容に変更が生じた場合、または、利用対象の利用形態に関して新しい利用形態が生じた場合においても、利用ライセンスデータの参照情報を含む電子的利用権そのものの機能や仕様に変更が生じることがないため、利用者に対しては電子的利用権に対する統一的な操作性を提供することができる。その結果、電子的利用権に対する操作性の変

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更に伴って生じる利用者側の混乱や煩わしさを最小限に抑えることができる。

【0299】

請求項2、19によると、利用メータの少なくとも一部の複製物（コピー）である利用メータオブジェクトを端末装置に送信することにより、利用メータ自体を管理サーバ内から外部へ送信する必要がなくなっており、利用メータ自体を管理サーバ外部における流通と完全に切り離すことができる。また、端末装置に対して送信した利用メータオブジェクトによって利用対象の端末装置での利用量を計測して、利用対象の端末装置での利用量計測データを端末装置から受信することによって、利用メータの内容を適宜更新することができる。従って、利用対象についての利用可能な権利範囲を示す利用ライセンスデータの内容を超過して利用対象が利用されるのを防止することができる。さらに、利用メータのなかの一部（必要な部分）だけを複製した利用メータオブジェクトが端末装置に対して送信される場合には、利用メータ全体の複製物が端末装置に対して送信される場合と比較して、利用メータオブジェクトの送信に要する時間を低減することができるため、本管理サーバの処理能力を向上させることができると共に、利用メータの安全性を向上させることもできる。

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【0300】

請求項3、20によると、1つの利用メータに対応する利用対象が複数の利用者によって同時に使用される（二重使用される）という不正利用を防止することができる。そのため、利用対象についての利用可能な権利範囲を示す利用ライセンスデータの提供若しくは販売された量と利用者により使用される利用ライセンスデータの量を厳格に1対1に保持することができる。利用対象が不正に利用されるのを確実に防止することができる。

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【0301】

請求項4、21によると、利用メータの更新記録が保存されるため、本管理サーバにおける以前の利用記録を随時確認することができる。

【0302】

請求項5、22によると、電子的利用権に基づく利用対象の利用量がそれに対応する利用ライセンスデータの利用可能な権利範囲を超過すると、その電子的利用権とその電子的利用権に対応する利用メータが破壊されるため、その利用対象の利用を確実に停止させることができる。

【0303】

請求項6、23によると、利用対象についての利用可能な権利範囲を示す利用ライセンスデータのうち、利用メータにおいて残存している権利範囲内で、他の利用者に対して、自己の有する電子的利用権に対応する利用ライセンスデータに基づく利用対象の利用可能な権利を貸し出すことが可能となる。従って、利用対象の利用形態が多くなって、利用者の利便性が向上する。

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【0304】

請求項7、24によると、電子的利用権に基づく利用対象の貸出利用量がそれに対応する貸出データの貸出利用可能な権利範囲を超過すると、その電子的利用権に対応する貸出メータが破壊されると共に、その電子的利用権の貸し出しが解消されるため、その電子的利用権に対応する貸出データに基づく利用対象の利用可能な権利の貸出を確実に停止させることができる。

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【0305】

請求項8、25によると、電子的利用権に対応する貸出データに基づく利用対象の貸出利用量の管理を確実にできるため、その電子的利用権に対応する貸出データに基づく利用対象の利用可能な権利の不正な貸出利用を防止することができる。

【0306】

請求項9、26によると、複数の利用者間において、電子的利用権の譲渡、交換、売買を実行することが可能になる。従って、利用対象の利用形態が多くなって、利用者の利便性が向上する。

【0307】

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請求項 10、27 によると、複数の利用者間によって電子的利用権を共有することが可能になる。従って、利用対象の利用形態が多くなって、利用者の利便性が向上する。

【0808】

請求項 11、28 によると、利用対象の提供者は、利用者に対して利用ライセンスモデルの形で多様な選択肢を提供することができ、利用者は、その利用ライセンスモデルのなかから必要に応じて内容を選択することにより希望する利用ライセンスデータを得ることが可能となる。

【0809】

請求項 12、29 によると、利用ライセンスデータの生成数を計測して、その生成数に応じて、利用ライセンスモデルの公開が適宜停止或いは開始（再開）される。そのため、利用ライセンスデータの生成数に制限がある場合でも、利用ライセンスデータの生成数がその制限数を超過するのを防止することができる。従って、例えば電子図書館サービスのよう、利用ライセンスデータが貸し出されることを想定したものであって、その貸出可能部数に制限がある場合には、利用ライセンスデータの貸出数が制限数（貸出可能部数）に達すると、利用ライセンスモデルの公開が停止され、一方、貸し出された利用ライセンスデータに対応する電子的利用権が戻されて貸出可能部数に余裕が生じると、再度利用ライセンスモデルの公開が開始される。

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【0810】

請求項 13 によると、管理サーバから本端末装置に送信された利用メタオブジェクトおよびその参照情報を含む使用電子的利用権が管理されており、本端末装置の利用者は、利用メタオブジェクトに対しては直接アクセスすることなく、使用電子的利用権に対してのみアクセスすることによって、その使用電子的利用権に対応する利用対象を利用することができる。そのため、管理サーバから本端末装置に送信された利用メタオブジェクトに対する不正なアクセスを抑制することができる。これにより、使用電子的利用権に対応する利用対象のより安全な利用を促進することができると共に、利用者に対してより統一的操作方法を提供することができる。

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【0811】

請求項 14 によると、利用メタオブジェクトが、利用対象の配置情報および利用対象の端末装置上での格納情報を含む利用対象管理用データテーブルを有しているため、端末装置において利用ライセンスデータに応じた利用対象を確実に利用することができる。

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【0812】

請求項 15 によると、利用メタに基づく利用対象の利用量がその使用電子的利用権に対応する利用ライセンスデータの利用可能な権利範囲を超過すると、その使用電子的利用権およびそれに対応する利用メタオブジェクトが破壊されるため、その利用対象の利用を確実に停止させることができる。

【0813】

請求項 16 によると、貸出メタに基づいた電子的利用権の貸出量が貸し出し可能な権利範囲を超過すると、その電子的利用権に対応する使用電子的利用権およびその使用電子的利用権から参照される利用メタオブジェクトが破壊されるため、貸出データに基づく利用対象の利用可能な権利の貸出を確実に停止させることができる。

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【0814】

請求項 17 によると、利用対象の管理サーバと端末装置との組み合わせによって、それぞれ請求項 1～16 と同様の効果を得ることができる。

【図面の簡単な説明】

【図 1】本実施の形態に係るディジタル著作物の管理システムの構成を示すブロック図である。

【図 2】図 1 の管理システムに含まれる利用権運用口座管理サイトの構成を示す図である。

【図 3】図 1 の管理システムに含まれるコンテンツサイトの構成を示す図である。

【図 4】図 1 の管理システムに含まれる利用権サイトの構成を示す図である。

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- 【図 5】図 1 の管理システムに含まれる利用権口座管理サイトの構成を示す図である。
- 【図 6】図 1 の管理システムに含まれる利用メータ管理サイトの構成を示す図である。
- 【図 7】図 1 の管理システムに含まれる運用勘定の構成を示す図である。
- 【図 8】図 1 の管理システムに含まれる引出勘定の構成を示す図である。
- 【図 9】流通利用権および利用メータの概略構成を示す図である。
- 【図 10】使用利用権および利用メータオブジェクトの概略構成を示す図である。
- 【図 11】図 1 の管理システムにおける「コンテンツの預け入れ」に関する動作ステップを示す図である。
- 【図 12】図 1 の管理システムにおける「利用ライセンスモデルの預け入れ」に関する動作ステップを示す図である。
- 【図 13】図 1 の管理システムにおける「利用ライセンスモデルの公開」に関する動作ステップを示す図である。
- 【図 14】図 1 の管理システムにおける「コンテンツの配置」に関する動作ステップを示す図である。
- 【図 15】図 1 の管理システムにおける「利用権口座の新規開設」に関する動作ステップを示す図である。
- 【図 16】図 1 の管理システムにおける「流通利用権の購入」に関する動作ステップを示す図である。
- 【図 17】図 1 の管理システムにおける「流通利用権の引き出し」に関する動作ステップを示す図である。
- 【図 18】図 1 の管理システムにおける「流通利用権の預け入れ」に関する動作ステップを示す図である。
- 【図 19】図 1 の管理システムにおける「流通利用権の貸し出し」に関する動作ステップを示す図である。
- 【図 20】図 1 の管理システムにおける「流通利用権の譲渡」に関する動作ステップを示す図である。
- 【図 21】図 1 の管理システムにおける「共有グループの設定」に関する動作ステップを示す図である。
- 【図 22】図 1 の管理システムにおける「流通利用権の共有設定」に関する動作ステップを示す図である。
- 【符号の説明】
- 1 管理システム
  - 10 管理サーバ
  - 20 コンピュータ
  - 30 コンピュータ（端末装置）
  - 100 利用権運用口座管理サイト
  - 124 認証管理部（端末装置利用者識別手段）
  - 132 利用ライセンスモデル管理部（利用ライセンスモデル公開手段）
  - 200 コンテンツサイト
  - 224 認証管理部（端末装置利用者識別手段）
  - 231 コンテンツ管理部
  - 300 利用権サイト
  - 324 認証管理部（端末装置利用者識別手段）
  - 332 利用ライセンスデータ管理部（利用ライセンスデータ生成手段；利用ライセンスデータ生成数計測手段；利用ライセンスデータ参照情報生成手段；貸出データ指定手段；貸出解消手段）
  - 333 流通利用権管理部（電子的利用権生成手段；電子的利用権破壊手段）
  - 400 利用権口座管理サイト
  - 424 認証管理部（端末装置利用者識別手段）
  - 431 流通利用権口座管理部（電子的利用権管理手段）

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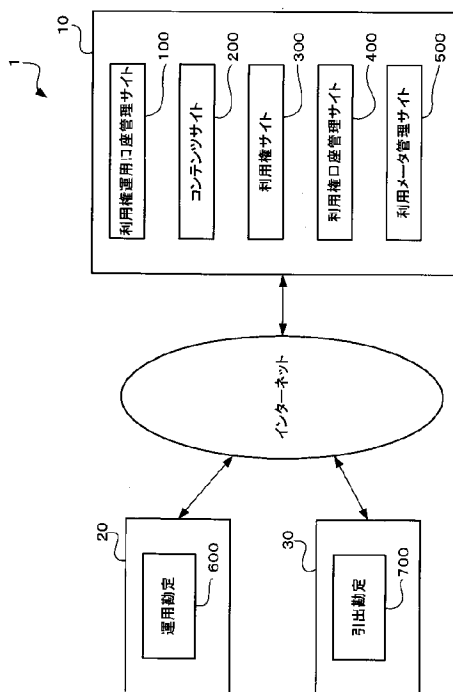
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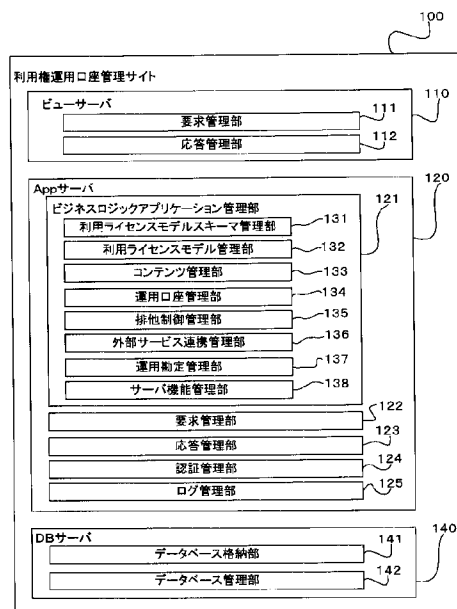
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- 432 共有グループ口座管理部（電子の利用権共有手段）  
 433 流通利用権管理部（電子の利用権移動手段）  
 500 利用メータ管理サイト  
 524 認証管理部（端末装置利用者識別手段）  
 531 利用メータ管理部（利用メータ生成手段；利用メータ更新手段；利用メータ破壊手段；利用メータ管理手段；利用量計測データ受信手段；記録保存手段）  
 532 貸出メータ管理部（貸出メータ参照情報生成手段）  
 534 利用メータオブジェクト管理部（利用メータオブジェクト生成手段；利用メータオブジェクト送信手段）  
 535 貸出メータオブジェクト管理部（貸出メータ生成手段；貸出メータ破壊手段；貸出管理用データテーブル生成手段；貸出管理用データテーブル設定手段） 10  
 600 運用勘定  
 700 引出勘定  
 731 流通および使用利用権管理部（使用電子の利用権管理手段；利用量計測データ送信手段；破壊手段）  
 733 利用メータオブジェクト管理部（利用メータオブジェクト管理手段；利用メータオブジェクト受信手段）

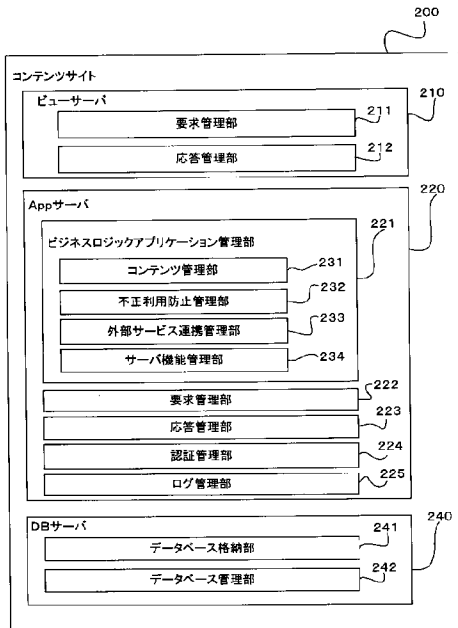
【図 1】



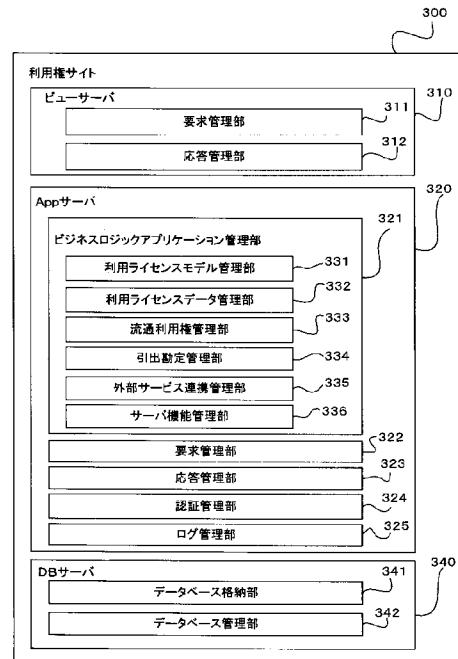
【図 2】



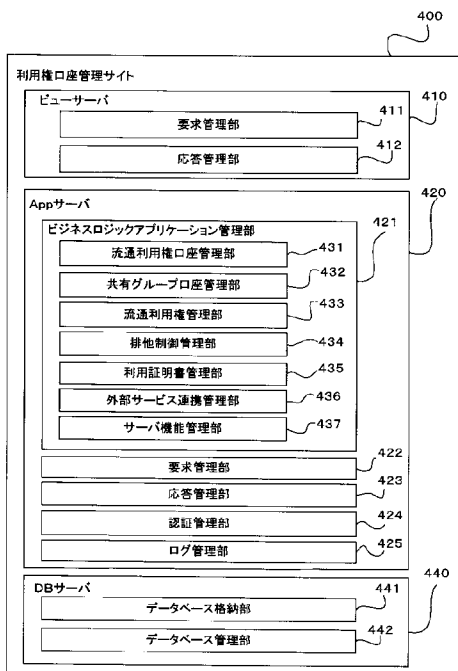
【図 3】



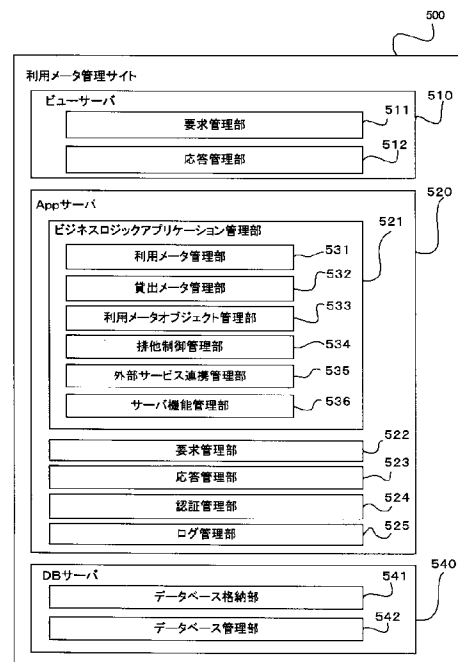
【図 4】



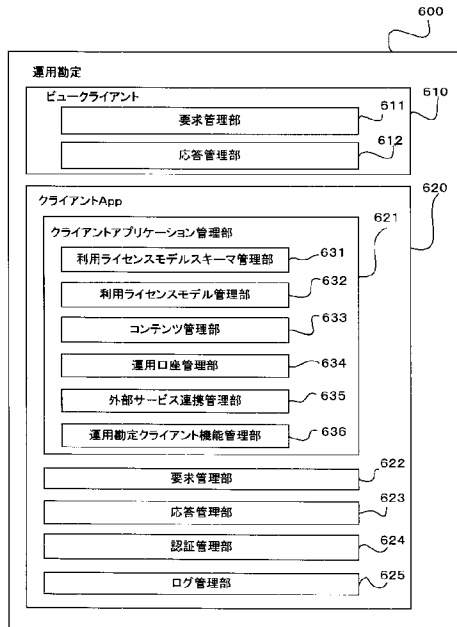
【図 5】



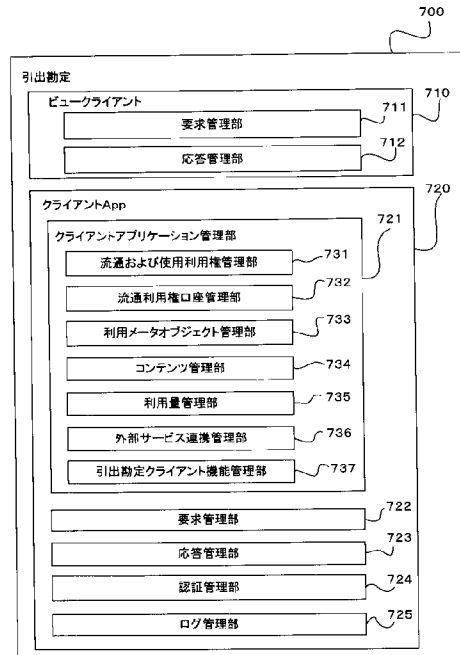
【図 6】



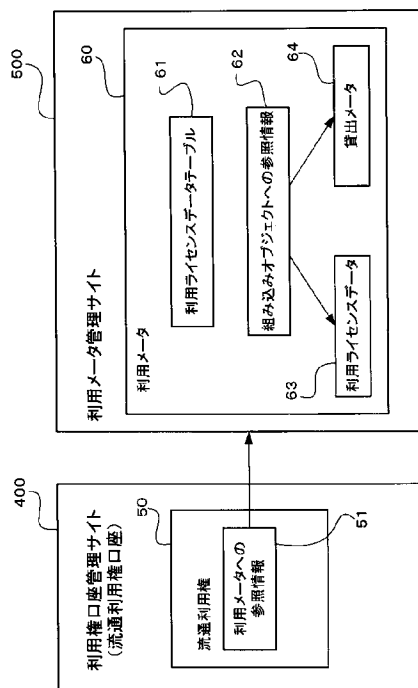
【図 7】



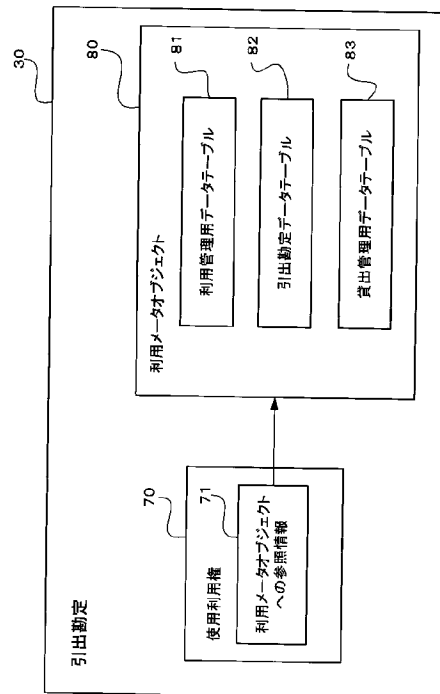
【図 8】



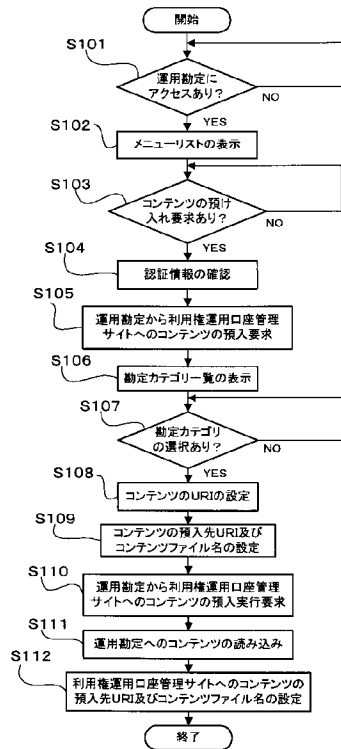
【図 9】



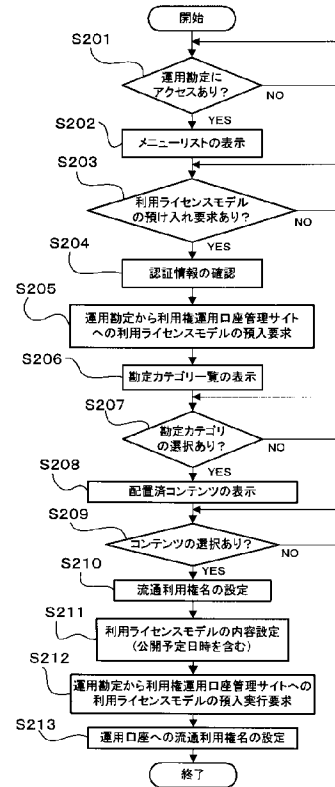
【図 10】



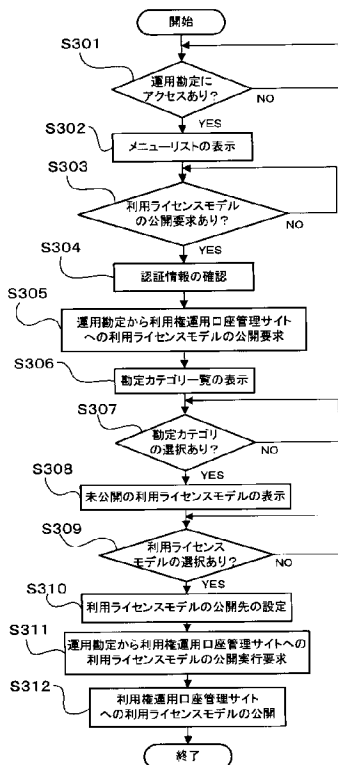
【図 1 1】



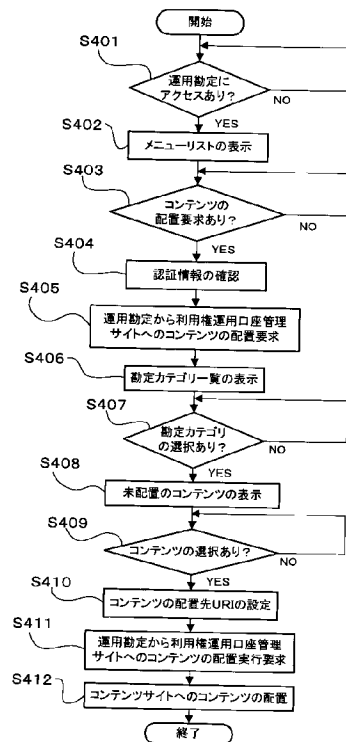
【図 1 2】



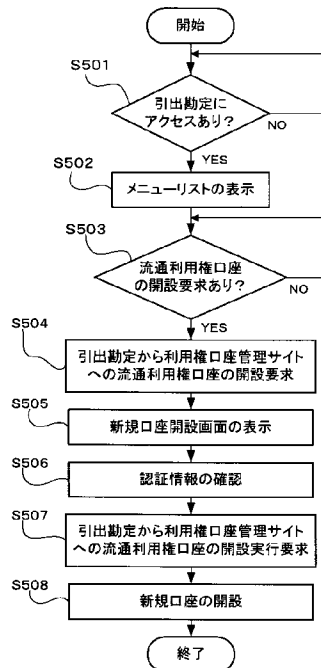
【図 1 3】



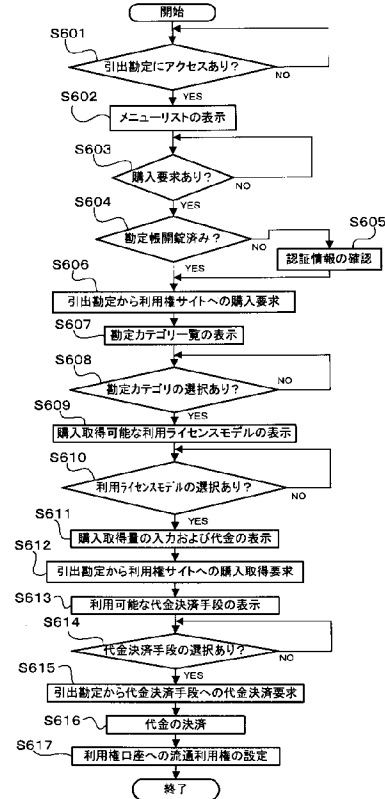
【図 1 4】



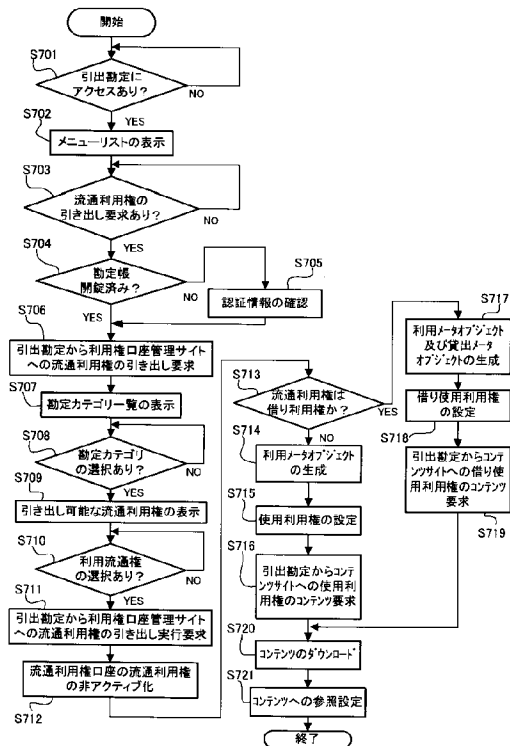
【図 15】



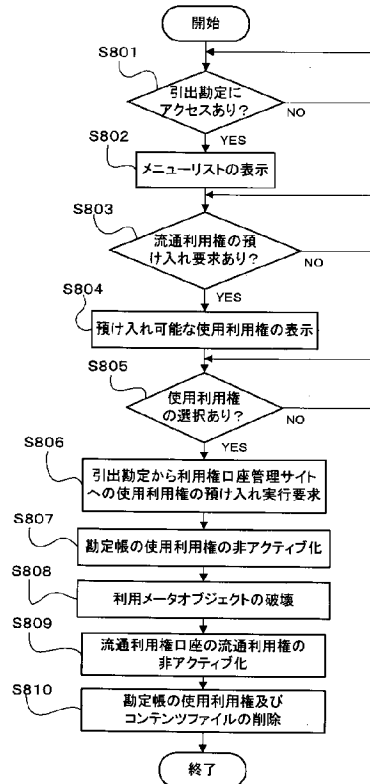
【図 16】



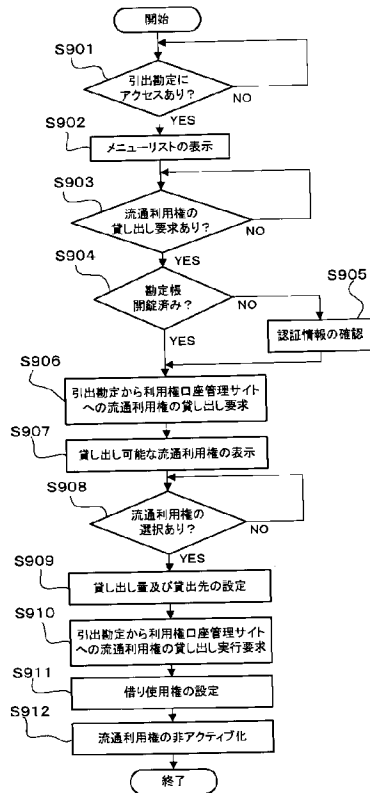
【図 17】



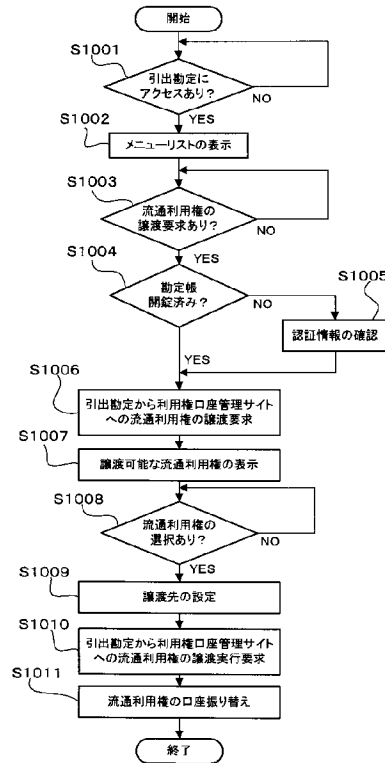
【図 18】



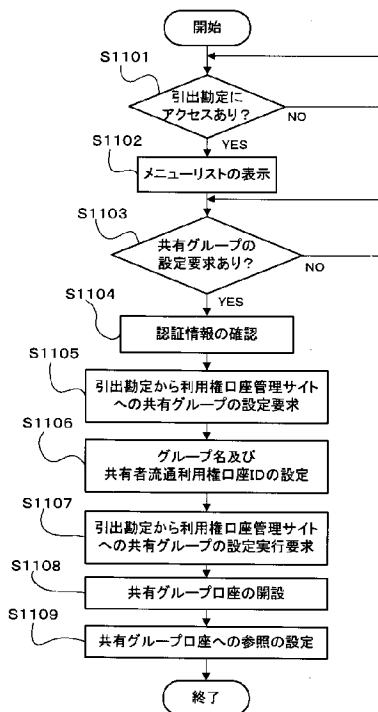
【図 19】



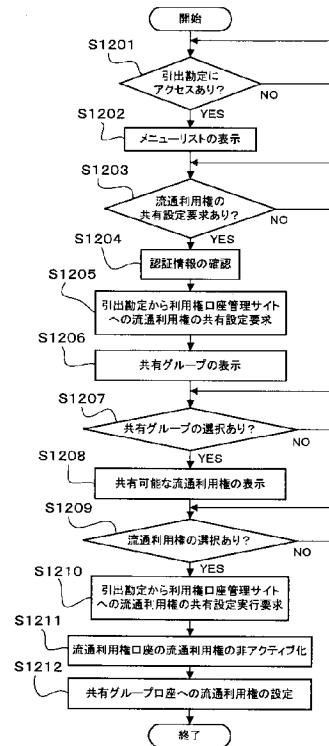
【図 20】



【図 21】



【図 22】





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# System and method for third party application sales and services to wireless devices

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Classification:

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H04M3/493; H04W4/24

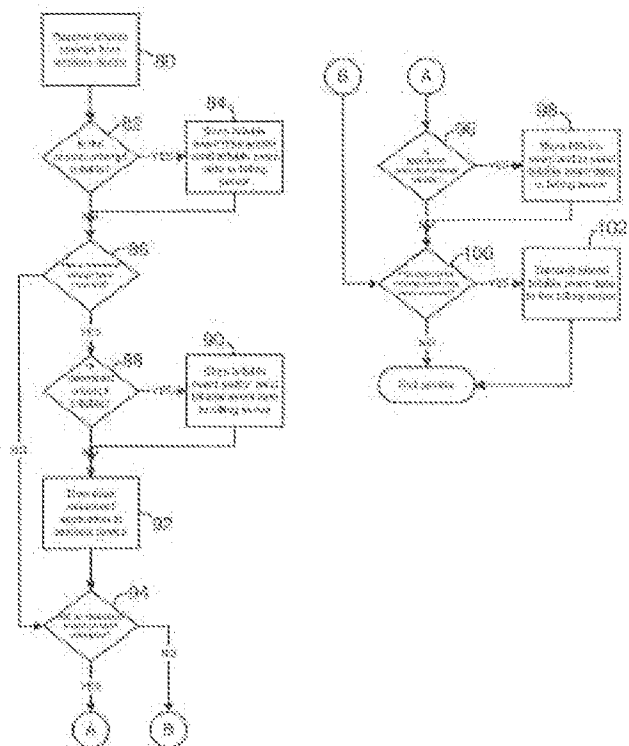
Application number: JP20040531867T 20030828

Priority number(s): US20020231970 20020830; WO2003US27014 20030828

Abstract not available for JP 2005537544 (T)

Abstract of corresponding document: **US 2004043753 (A1)**

A system, method, and computer program for billing wireless device subscribers for their interaction with applications and services resident on third party computer devices that are accessible through a wireless network. The wireless devices, such as cellular telecommunication devices, communicate with other computer devices across a wireless network and an end-user thereof, who is not necessarily the subscriber for the wireless service, can selectively download and execute software applications. Third party computer devices, such as application download servers, are accessible on the wireless network and selectively provide applications and services to the wireless devices, and the interaction of the wireless devices with the third party computer devices causes billable events to occur, and a billing server gathers the billable event data, generates billing for the wireless device subscribers, and effects payment of the third parties for billable events at the computer devices of that third party.



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(12) 公表特許公報 (A)

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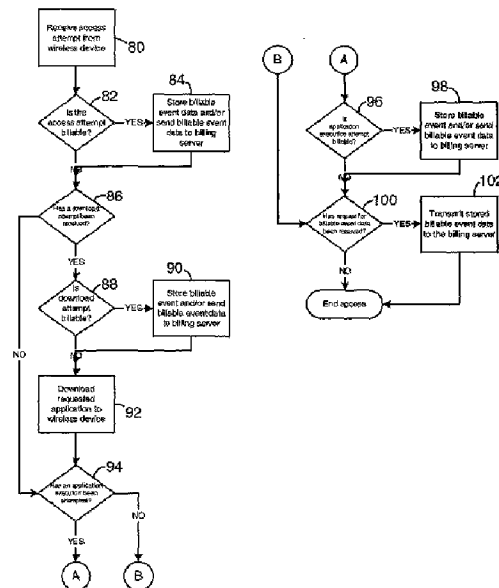
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(54) 【発明の名称】 無線装置へのサードパーティのアプリケーションの販売およびサービスのためのシステムおよび方法

(57) 【要約】

無線ネットワークを介してアクセス可能なサードパーティのコンピュータ装置上に常駐しているアプリケーションおよびサービスとの対話に対して無線装置の加入者に請求書を発行するためのシステム、方法、およびコンピュータプログラム。セルラ遠隔通信装置のような無線装置は、無線ネットワークを横切って、他のコンピュータ装置と通信し、そのエンドユーザ（必ずしも無線サービスの加入者ではない）は、ソフトウェアアプリケーションを選択的にダウンロードし、実行することができる。アプリケーションダウンロードサーバのようなサードパーティのコンピュータ装置は、無線ネットワーク上でアクセス可能であり、無線装置へアプリケーションおよびサービスを選択的に与え、無線装置とサードパーティのコンピュータ装置との対話により、請求可能なイベントが発生し、請求書発行サーバは、請求可能なイベントのデータを集め、無線装置の加入者の請求書を生成し、そのサードパーティのコンピュータ装置における請求可能なイベントに対してサードパーティに支払う。



**【特許請求の範囲】****【請求項 1】**

無線ネットワークへの加入者の無線装置へサードパーティのアプリケーションおよびサービスを与え、請求書を発行するシステムであって、

各無線装置が、無線ネットワークを横切って他のコンピュータ装置と選択的に通信し、さらに加えて、コンピュータプラットフォームと、コンピュータプラットフォーム上でソフトウェアアプリケーションを選択的にダウンロードして実行することができるそのエンドユーザとを含む 1 つ以上の無線装置と、

無線ネットワークを横切って 1 つ以上の無線装置へアプリケーションおよびサービスを選択的に与える 1 つ以上のサードパーティのコンピュータ装置であって、無線装置とサードパーティのコンピュータ装置のアプリケーションとの対話が、1 つ以上の請求可能なイベントを発生させる 1 つ以上のサードパーティのコンピュータ装置と、

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無線装置と 1 つ以上のサードパーティのコンピュータ装置との対話から、請求可能なイベントについての少なくとも 1 つの請求可能なイベントのデータを集め、サードパーティのアプリケーションおよびサービスの請求可能なイベントに対して、そのサードパーティに支払う少なくとも 1 つの請求書発行サーバとを含むシステム。

**【請求項 2】**

請求書発行サーバが、さらに加えて、各無線装置の請求可能なイベントに対して、その無線装置の請求書を生成する請求項 1 記載のシステム。

**【請求項 3】**

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請求可能なイベントのデータが、請求書発行サーバのみにおいて集められる請求項 1 記載のシステム。

**【請求項 4】**

請求書発行サーバが、さらに加えて、集められた請求可能なイベントのデータに基づいて、各無線装置の請求書を生成する請求項 1 記載のシステム。

**【請求項 5】**

生成された請求書が、請求書発行サーバからネットワークキャリアへ伝送される請求項 4 記載のシステム。

**【請求項 6】**

請求可能なイベントが、無線ネットワーク上でのサードパーティのアプリケーションダウンロードサーバから無線装置のコンピュータプラットフォームへのアプリケーションのダウンロードである請求項 1 記載のシステム。

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**【請求項 7】**

請求可能なイベントが、無線装置上でのアプリケーションの実行である請求項 1 記載のシステム。

**【請求項 8】**

請求可能なイベントが、サードパーティのコンピュータ装置上に常駐しているアプリケーションへのアクセスである請求項 1 記載のシステム。

**【請求項 9】**

サードパーティのコンピュータ装置が、請求可能なイベントのデータを集め、集められた請求可能なイベントのデータを請求書発行サーバへ伝送する請求項 1 記載のシステム。

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**【請求項 10】**

サードパーティのコンピュータ装置が、請求書発行サーバから照会されたときに、請求可能なイベントのデータを請求書発行サーバへ伝送する請求項 9 記載のシステム。

**【請求項 11】**

無線ネットワーク上でサードパーティのアプリケーションおよびサービスを与えて、請求書を発行するシステムであって、

無線ネットワークを横切って他のコンピュータ装置と選択的に通信し、ソフトウェアアプリケーションを選択的にダウンロードして、実行する無線通信手段と、

無線ネットワークを横切って無線通信手段へアプリケーションおよびサービスを選択

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的に与えるアプリケーション手段であって、無線通信手段とアプリケーション手段との対話が、1つ以上の請求可能なイベントを発生させ、アプリケーションおよびサービスがサードパーティによって与えられるアプリケーション手段と、

請求可能なイベントについての請求可能なイベントのデータを集め、請求可能なイベントに対してサードパーティに支払う請求書発行手段とを含むシステム。

【請求項12】

無線ネットワークへの加入者の無線装置へ与えられるサードパーティのアプリケーションおよびサービスに対して請求書を発行する方法であって、

無線装置とサードパーティのコンピュータ装置との対話によって、請求可能なイベントを発生させるステップと、

請求書発行サーバにおいて、請求可能なイベントを請求可能なイベントのデータへ集約するステップと、

請求書発行サーバにおいて、請求可能なイベントに基づいて、各請求可能なイベントの適切な加入者へ請求書を発行するステップと、

サードパーティのコンピュータ装置において行われた請求可能なイベントに対してサードパーティに支払うステップとを含む方法。

【請求項13】

請求可能なイベントを請求可能なデータへ集約するステップが、請求書発行サーバにおいて行われる請求項12記載の方法。

【請求項14】

請求可能なイベントを請求可能なデータへ集約するステップが、サードパーティのコンピュータ装置において行われ、サードパーティのコンピュータ装置から請求書発行サーバへ請求可能なイベントのデータを伝送するステップをさらに含む請求項12記載の方法。

【請求項15】

無線装置の加入者のデータを得るステップと、

請求可能なイベントのデータに基づいて、無線装置の請求書を請求書発行サーバにおいて生成するステップとをさらに含む請求項12記載の方法。

【請求項16】

無線ネットワーク上で請求書発行サーバから別のコンピュータ装置へ請求書を伝送するステップをさらに含む請求項15記載の方法。

【請求項17】

1つ以上の請求可能なイベントを発生させるステップが、無線ネットワーク上でサードパーティのアプリケーションダウンロードサーバから無線装置へアプリケーションをダウンロードすることによって、請求可能なイベントを発生させている請求項12記載の方法。

【請求項18】

1つ以上の請求可能なイベントを発生させるステップが、無線装置上でアプリケーションを実行することによって請求可能なイベントを発生させている請求項12記載の方法。

【請求項19】

1つ以上の請求可能なイベントを発生させるステップが、無線装置が、無線ネットワーク上でサードパーティのコンピュータ装置上に常駐しているアプリケーションへアクセスすることによって、請求可能なイベントを発生させている請求項12記載の方法。

【請求項20】

サードパーティのコンピュータ装置に、請求可能なイベントのデータを請求書発行サーバへ伝送するように指示するステップをさらに含む請求項14記載の方法。

【請求項21】

無線ネットワークへの加入者の無線装置に与えられたサードパーティのアプリケーションおよびサービスに対して請求書を発行する方法であって、

無線装置とサードパーティのコンピュータ装置との対話によって発生する請求可能なイベントを発生させるステップと、

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請求書発行サーバにおいて、請求可能なイベントの請求可能なイベントのデータを集約するステップと、

請求書発行サーバにおいて、請求可能なイベントのデータに基づいて、各請求可能なイベントの適切な加入者に請求書を発行するステップと、

サードパーティのコンピュータ装置において行われた請求可能なイベントに対して、そのサードパーティに支払うステップとを含む方法。

【請求項 2 2】

無線ネットワークを介してアクセス可能なサードパーティのコンピュータ装置に常駐しているサードパーティのアプリケーションおよびサービスとの無線装置の対話によって発生する請求可能なイベントに対して、無線装置の加入者に請求書を発行するサーバであって、無線装置は、ソフトウェアアプリケーションを選択的にダウンロードし、実行することができ、サーバは、さらに加えて、サードパーティのコンピュータ装置と無線装置との対話による請求可能なイベントについての請求可能なイベントのデータを集め、サードパーティのコンピュータ装置において行われた請求可能なイベントに対して、そのサードパーティに支払うサーバ。

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【請求項 2 3】

サーバが、さらに加えて、無線装置の少なくとも請求可能なイベントに対して、その無線装置の請求書を生成する請求項 2 2 記載のサーバ。

【請求項 2 4】

請求書発行サーバが、さらに加えて、集められた請求可能なイベントのデータに基づいて、無線装置の加入者の請求書を生成する請求項 2 3 記載のサーバ。

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【請求項 2 5】

生成された請求書が、無線ネットワーク上で請求書発行サーバから別のコンピュータ装置へ伝送される請求項 2 4 記載のサーバ。

【請求項 2 6】

サーバが、サードパーティのコンピュータ装置から請求可能なイベントのデータを受信する請求項 2 2 記載のサーバ。

【請求項 2 7】

サーバが、さらに加えて、サードパーティのコンピュータ装置に、請求可能なイベントのデータをサーバへ伝送するように指示する請求項 2 6 記載のサーバ。

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【請求項 2 8】

1 つ以上の無線装置およびサードパーティのコンピュータ装置を含む無線ネットワーク上でコンピュータ装置によって実行されるとき、

請求可能なイベントを請求可能なイベントとのデータへ集約するステップと、

請求可能なイベントのデータに基づいて、各請求可能なイベントの適切な無線装置の加入者に請求書を発行するステップと、

サードパーティのコンピュータ装置において行われた請求可能なイベントに対してサードパーティに支払うステップとを行うことによって、サードパーティのコンピュータ装置上のサードパーティのアプリケーションおよびサービスと無線装置との対話によって発生する請求可能なイベントに対して請求書を発行するように、コンピュータ装置に命令するコンピュータプログラム。

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【請求項 2 9】

サードパーティのコンピュータ装置から請求可能なイベントのデータを受信するステップを行うようにコンピュータ装置にさらに命令する請求項 2 8 記載のプログラム。

【請求項 3 0】

無線装置の加入者のデータを受信するステップを行うようにコンピュータ装置にさらに命令する請求項 2 8 記載のプログラム。

【請求項 3 1】

請求可能なイベントのデータに基づいて無線装置の請求書を生成するステップを行うようにコンピュータ装置にさらに命令する請求項 3 0 記載のプログラム。

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## 【請求項 3 2】

無線ネットワーク上の別のコンピュータ装置に請求書を伝送するステップを行うようにコンピュータ装置にさらに命令する請求項 3 1 記載のプログラム。

## 【請求項 3 3】

サードパーティのコンピュータ装置に、請求可能なイベントのデータを伝送するように指示するステップを行うようにコンピュータ装置にさらに命令する請求項 2 8 記載のプログラム。

## 【発明の詳細な説明】

## 【技術分野】

## 【0001】

本発明は、概ね、無線装置および無線ネットワークに関する。とくに、本発明は、無線ネットワークを横切って無線遠隔通信装置へのサードパーティのアプリケーションの販売およびサービスを可能にするシステムおよび方法に関し、システムは、適正に明細を明らかにして、無線サービスの加入者に請求書を発行し、販売されたアプリケーションおよびサービスの適切な売り上げをサードパーティに与える。

## 【背景技術】

## 【0002】

セルラ電話のような無線装置は、音声およびデータを含むパケットを無線ネットワーク上で通信する。セルラ遠隔通信システムのような既存の無線遠隔通信システムにおいて、料金は、遠隔通信装置の初期起動に対して加入者に課金され、その後は、継続通信時間および装置の使用に対して課金される。しかしながら、既存のシステムは、通常、通信時間の使用以外の、遠隔通信装置における他のアクティビティの明細を明らかにしない。

## 【0003】

さらに加えて、無線装置の加入者が、ソフトウェアアプリケーションをダウンロードして使用するか、または遠隔通信装置の機能を更新したいとき、ユーザは、通常、サービスプロバイダを呼ぶか、または異なるインターネットアクセスのような別の電子的手段によってサービスプロバイダに連絡する。いくつかの例では、サービスプロバイダが、（1回の直接アクセスのダウンロードによって）無線ネットワークを横切って無線装置へアプリケーションを伝送するか、またはユーザが無線装置を使用して無線ネットワークを介してネットワークサイトにアクセスすることを許可し、このようなネットワークサイト上で、アプリケーションを加入者にダウンロードすることができ、または加入者がアプリケーションにアクセスすることができる。さもなければ、プロバイダのサービス要員が、遠隔通信装置に物理的にアクセスして、ソフトウェアをインストールするか、またはその構成要素を更新しなければならない。

## 【発明の開示】

## 【発明が解決しようとする課題】

## 【0004】

したがって、無線遠隔通信装置を監視して、請求書を発行する既存のシステムでは、サービスプロバイダは、サービスプロバイダのコンピュータ装置上に現れない無線装置によるアクティビティに対して、請求書を発行したり、または明細を明らかにすることはできない。追加の有料サービスを遠隔通信装置の加入者またはエンドユーザに与えるために、サービスプロバイダは、加入者にサービスプロバイダのコンピュータ装置に連絡して使用してもらわなければならない、プロバイダがその加入者に提供できる付加価値サービスが相当に制限される。したがって、本発明は、主に、無線装置のアクティビティを監視し、請求書を発行することができるシステムおよび方法を目的とする。

## 【課題を解決するための手段】

## 【0005】

本発明は、無線装置の加入者に、無線ネットワークを介してアクセス可能なサードパーティのコンピュータ装置上にあるアプリケーションおよびサービスとの対話に対して請求書を発行するためのシステム、方法、およびコンピュータプログラムである。セルラ遠隔

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通信装置のような無線装置は、無線ネットワークを横切って他のコンピュータ装置と通信し、そのエンドユーザは、必ずしもその無線装置の無線サービスの加入者ではないが、コンピュータプラットフォーム上のソフトウェアアプリケーションを選択的にダウンロードして実行することができる。さらに加えて、無線ネットワーク上のアプリケーションダウンロードサーバのようなサードパーティのコンピュータ装置は、付加価値アプリケーションおよびサービスを無線装置に選択的に与え、無線装置とサードパーティのコンピュータ装置のアプリケーションとの対話により、アプリケーションのダウンロードの実行、またはアクセスのような請求可能なイベントが発生する。請求書発行サーバは、最後に、無線ネットワーク中の請求可能なイベントのデータを集め、無線装置の加入者の請求書を生成し、無線装置とサードパーティのコンピュータ装置との請求可能なイベントに対してサードパーティに支払う。

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**【0006】**

システムは、各無線装置がコンピュータプラットフォームとそのエンドユーザとを含む1つ以上の無線装置と、アプリケーションおよびサービスを1つ以上の無線装置に無線ネットワークを横切って選択的に与える1つ以上のサードパーティのコンピュータ装置とを含み、無線装置とサードパーティのコンピュータ装置のアプリケーションまたはサービスとの対話により、対話している無線装置の1つ以上の請求可能なイベントが発生する。少なくとも1つの請求書発行サーバは、システムにおいて、無線装置と1つ以上のサードパーティのコンピュータ装置との対話から、少なくとも請求可能なイベントのデータを集め、さらに加えて、サードパーティのコンピュータ装置における請求可能なイベントについ

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**【0007】**

無線ネットワークへの加入者の無線装置に与えられる、サードパーティのアプリケーションおよびサービスに対する請求書発行方法は、無線装置とサードパーティのコンピュータ装置との対話によって請求可能なイベントを発生させるステップと、請求書発行サーバにおいて請求可能なイベントを請求可能なイベントのデータへ集約するステップと、請求書発行サーバにおいて、請求可能なイベントのデータに基づいて、各請求可能なイベントに対して適切な加入者に請求書を発行するステップと、サードパーティのコンピュータ装置における請求可能なイベントに対してサードパーティに支払うステップとを含む。方法は、請求書発行サーバから無線加入者に請求書を発行するステップ、およびサードパーティのコンピュータ装置に、集められた請求可能なイベントのデータを請求書発行サーバへ伝送するように指示するステップも含むことができる。

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**【0008】**

したがって、システムおよび方法は、無線サービスプロバイダが、アプリケーションのダウンロードおよび実行のような、無線ネットワークを介してアクセス可能なサードパーティのコンピュータ装置との無線遠隔通信装置のアクティビティを与えて、請求書を発行することができるようにする。したがって、システムおよび方法は、サービスプロバイダがその加入者にサードパーティの追加の付加価値サービスへのアクセスを許し、有料サービスからの収入を効率的に得て、分配できるといった恩恵を、サービスプロバイダに与える。さらに加えて、請求書発行システムは、加入者が追加のサービスを受取る、またはアクセスするために、サービスプロバイダまたはサードパーティに連絡をとることを要求しない。

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**【0009】**

本発明の他の目的、長所、および特徴は、別途記載される図面の簡単な説明、発明を実施するための最良の形態、および特許請求の範囲を見直すことによって、より明らかになるであろう。

**【発明を実施するための最良の形態】****【0010】**

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全体的に同じ参照符号が同じ要素を表わす図面を参照すると、図1は、セルラ電話12のような無線装置が、無線ネットワーク14を横切って、サードパーティのアプリケーションダウンロードサーバ30のようなサードパーティのコンピュータ装置と通信し、サードパーティのアプリケーションダウンロードサーバ30が、ソフトウェアアプリケーションまたは他のデータを、無線通信ポータルを横切って、または無線ネットワーク14への他のデータアクセスで、無線装置へ選択的にダウンロードすることによって発生する請求可能なイベントを追跡する本発明のシステム10の1つの実施形態を示す。無線ネットワーク14の発展において、無線装置のエンドユーザは、ソフトウェアアプリケーションをダウンロードして使用したいとき、無線ネットワーク14への通信接続をブリッジすることによって、アプリケーションダウンロードサーバ、すなわちキャリアのサーバまたはサードパーティのアプリケーションダウンロードサーバに接続し、希望のソフトウェアアプリケーションにアクセスしてダウンロードすることを試みる。無線装置がアプリケーションダウンロードサーバ30に連絡をとると、最初の連絡が行われ、アプリケーションダウンロードサーバ30は、何れのアプリケーションおよびデータが、その無線装置12、18、20、22に使用可能であるかを判断し、メニュー（図3参照）のような適切な情報を、無線装置12、18、20、22上に表示するために送ることができ、エンドユーザは使用可能なアプリケーションおよびサービスについて知ることができる。

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**【0011】**

ここに示されているように、無線装置は、グラフィックスディスプレイ13を備えたセルラ電話12；パーソナルデジタルアシスタント18；グラフィックスディスプレイを備えたページャ20（ここでは、双方向テキストページャとして示されている）か；または無線通信ポータルか、さもなければ、ネットワークまたはインターネットへのワイヤード接続24をもつ独立したコンピュータプラットフォーム22であってもよい。したがって、システム10は、無線通信ポータルを含む任意の形態の遠隔コンピュータモジュール（例えば、無線モデム、PCMCIAカード、アクセス端末、パーソナルコンピュータ、アクセス端末、ディスプレイまたはキーパッドのない電話、あるいはこれらの任意の組合せまたは部分的な組合せを無制限に含む）上で動作することができる。さらに加えて、ここに使用されている“アプリケーション”という用語は、実行可能および非実行可能なソフトウェアファイル、生データ、集約されたデータ、パッチ、および他の符号セグメントを含むことを意図されている。

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**【0012】**

システム10において、1つ以上の無線装置12、18、20、22は、各々が、無線ネットワーク14を横切って他のコンピュータと選択的に通信し、そのエンドユーザは、ソフトウェアアプリケーションを選択的にダウンロードして、実行することができる。無線装置12、18、20、22は、サードパーティのアプリケーションダウンロードサーバ30およびスタンドアロンサーバ32のような、1つ以上のサードパーティのコンピュータ装置と通信し、無線装置がサードパーティのコンピュータ装置のアプリケーションと対話すると、1つ以上の請求可能なイベントが発生し、少なくとも1つの請求書発行サーバ16は、無線装置と1つ以上のサードパーティのコンピュータ装置（サーバ30および32）との対話から請求可能なイベントについての少なくとも請求可能なイベントのデータを集める。請求可能なイベントは、アプリケーションの購入、ダウンロード、および／または実行、メニューへのアクセス、無線装置のツールおよび診断、あるいは無線装置12、18、20、22とサードパーティのコンピュータ装置（サーバ30および32）との間の他の付加価値データの対話である。その後で、ここで別途詳しく記載されるように、請求書発行サーバ16は、サードパーティのサーバにおける請求可能なイベントに対して、そのサードパーティに支払う。

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**【0013】**

1つ以上の無線装置12、18、20、22は、通常、その装置を動作しているエンドユーザの命令で、無線ネットワークを横切って、他のコンピュータ装置（アプリケーションダウンロードサーバ30またはサードパーティのスタンドアロンサーバ32）と選択的に通信する。ここには、この両者が、ローカルサーバ側ネットワーク26上で、他のコンピュータ要素

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(例えば、無線装置の請求可能なイベントのデータを収めている請求可能なイベントのデータベース28)と共に、無線ネットワーク14と通信していることが示されている。アプリケーションダウンロードサーバ30またはスタンドアロンサーバ32は、無線装置に付加価値サービス、例えば、ダウンロード可能なアプリケーションおよび他の対話、例えば、生の株式相場、ニュース、および双方向型ゲームを与える。ここに別途詳しく記載されるように、全構成要素は、直列に動作し、請求書発行サーバ16において、無線装置12、18、20、22の請求可能なイベントに関係するデータを集め、請求可能なイベントデータに集約する。しかしながら、全てのサーバ側の機能を、請求書発行サーバ16のような、1つのサーバ上で行うことができることに注意すべきである。さらに加えて、コンピュータまたはサーバ側コンピュータのプラットフォームは、無線ネットワーク14を横切って、無線装置12、18、20、22に別々のサービスおよび処理を与えることができる。

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#### 【0014】

図2は、無線ネットワーク14の構成要素およびシステム10の要素の相互関係をより完全に表示するブロック図である。無線ネットワーク14は、単なる代表例であって、無線装置12、18、20、22のような遠隔モジュールは、互いに、または無線ネットワーク14の構成要素(無線ネットワークのキャリアまたはサーバ、あるいはこの両者を制限することなく含む)との間で、あるいはこの両者との間で、空中で通信する。サーバ側構成要素は、請求書発行サーバ16、サードパーティのアプリケーションダウンロードサーバ30、請求可能なイベントのデータベース28、無線装置のデータベース34、およびサードパーティのアプリケーションのデータベース36である。セルラデータネットワーク上には、他のサーバ側構成要素が、セルラ遠隔通信サービスを与えるのに必要な他の構成要素と共に存在する。図2に具体化されているサーバ側構成要素は、単に、サードパーティのアプリケーションダウンロードサーバ30からダウンロードされるアプリケーションを追跡することによって、請求書発行システム10を単独で生成することができ、ダウンロードに対する請求書の発行は、請求書発行サーバ16が請求可能なイベントのデータベース28と無線装置のデータベース34とを相関させることによって生成される。サードパーティのアプリケーションダウンロードサーバ30は、アプリケーションおよび他のサービスを無線装置12、18、20、22へ与える別個のサードパーティのアプリケーションデータベース36をもつことができる。容易にスケラブルなサードパーティのハードウェアを使用するとき、無線装置がアクセスできるようにすることができるコンピュータ装置の数は、理論上は無制限である。

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#### 【0015】

サーバ側構成要素は、インターネット、セキュリティ保護されたLAN、WAN、または他のネットワークのようなデータリンクによって、キャリアネットワーク40と通信する。キャリアネットワーク40は、メッセージングサービス制御装置(messaging service controller, MSC)42へ送られる(一般に、データパケットの形の)メッセージを制御する。キャリアネットワーク40は、ネットワーク、インターネット、および/または普通の従来の電話システム(plain ordinary telephone system, POTS)によってMSC42と通信する。通常、キャリアネットワーク40とMSC42とはネットワークまたはインターネット接続ではデータを転送し、POTSでは音声情報を転送する。MSC42は、多数の基地局(base station, BTS)44に接続される。MSC42は、通常、キャリアネットワークのときと同様のやり方で、データ転送のときはネットワークまたはインターネット、あるいはこの両者によって、音声情報のときはPOTSによって、BTS44に接続される。BTS44は、最後に、ショートメッセージングサービス(short messaging service, SMS)、またはこの分野において知られている他の空中方法によって、セルラ電話12のような無線装置に、メッセージをワイヤレスで同報通信する。

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#### 【0016】

セルラ電話12のような無線装置は、コンピュータプラットフォーム50をもち、コンピュータプラットフォーム50は、アプリケーションダウンロードサーバ30から伝送されたソフトウェアアプリケーションを受信して、実行することができる。コンピュータプラットフォーム50は、主な構成要素として、特定用途向け集積回路(application-specific integ

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rated circuit, ASIC) 52、または他のプロセッサ、マイクロプロセッサ、論理回路、プログラム可能なゲートアレイ、または他のデータ処理装置を含む。ASIC 52は、無線装置を製造する時にインストールされ、通常は、アップグレードできない。ASIC 52または他のプロセッサは、アプリケーションプログラミングインターフェイス (application programming interface, API) 層54を実行し、API 層54は、無線装置のメモリ56内の常駐プログラムとインターフェイスしている。メモリは、読み出し専用メモリ (read-only memory, ROM)、ランダムアクセスメモリ (random-access memory, RAM)、EPROM、EEPROM、フラッシュカード、またはコンピュータプラットフォームに共通のメモリを含むことができる。コンピュータプラットフォーム50は、ローカルデータベース58も含み、ローカルデータベース58は、サードパーティのアプリケーションダウンロードサーバ30からダウンロードされたソフトウェアアプリケーションのような、メモリ56においてアクティブに使用されていないソフトウェアアプリケーションを保持することができる。ローカルデータベース58は、通常、1つ以上のフラッシュメモリセルで構成されるが、磁気媒体、EPROM、EEPROM、光媒体、テープ、あるいは、ソフトまたはハードディスクのような、この分野において知られている第2および第3の記憶装置であってもよい。

#### 【0017】

セルラ電話12のようなセルラ電話および遠隔通信装置は、向上した計算能力をもつものが製造されていて、パーソナルコンピュータおよび携帯形パーソナルデジタルアシスタント (personal digital assistant, PDA) と同等になってきている。これらの“スマートな”セルラ電話は、ソフトウェアの開発者が、セルラ装置のASIC 52のようなプロセッサにダウンロード可能で実行可能なソフトウェアアプリケーションを作成することを可能にした。セルラ電話12のような無線装置は、ゲームおよび株式モニターのような多くのタイプのアプリケーション、または単に、ニュースおよびスポーツに関係するデータのようなデータをダウンロードすることができる。ダウンロードされたデータまたは実行されたアプリケーションは、ディスプレイ13上に直ちに表示されるか、または使用されないときは、ローカルデータベース58に記憶される。ソフトウェアアプリケーションは、無線装置12、18、20、22上にある普通のソフトウェアアプリケーションとして扱うことができ、ユーザは、記憶されているアプリケーションを、ローカルデータベース58からメモリ56へ選択的にアップロードして、API 54上で実行することができる。無線装置12、18、20、22のユーザは、ソフトウェアアプリケーションをローカルデータベース58から選択的に消去することもできる。したがって、セルラ電話12のエンドユーザは、プログラム、例えばゲーム、印刷媒体、株式の最新情報、またはニュース、あるいはアプリケーションダウンロードサーバから無線ネットワーク14を介してダウンロードできる他のタイプの情報またはプログラムを使用して、電話をカスタマイズすることができる。

#### 【0018】

無線装置12、18、20、22がサードパーティのこれらの付加価値サービスを使用すると、請求可能なイベントが発生し、これに対して、無線ネットワークのサービスプロバイダは、無線装置の加入者 (請求可能なイベント時に、必ずしも無線装置のエンドユーザではない) に請求書を発行する。請求可能なイベントは、通常、エンドユーザが、サードパーティのアプリケーションダウンロードサーバ30から与えられたアプリケーションを使用して、いくつかのアクティビティを行うことによって発生する。請求可能なイベントの例は、無線ネットワーク14上でのサードパーティのアプリケーションダウンロードサーバ30から無線装置のコンピュータプラットフォーム50へのアプリケーションのダウンロード；無線装置12、18、20、22上でのアプリケーションの実行；アプリケーションダウンロードサーバ30による、スタンドアロンサーバ32のような無線ネットワーク14上の別のコンピュータ上に常駐のアプリケーション、またはサードパーティのアプリケーションデータベース36のようなデータベースへのアクセス；あるいはその実行または対話の別のパラメータを含むが、これらに限定されない。

#### 【0019】

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システム10では、独立のソフトウェアの製造者または開発者のようなサードパーティが、サードパーティ自身のコンピュータ装置またはネットワークキャリア40のサーバを介して、無線装置にダウンロードできるソフトウェアアプリケーションを与えることができる。多数のコンピュータ装置が、アプリケーションおよびサービスの最終的な配信に関係することができ、無線装置12、18、20、22は、1つ以上のサードパーティのコンピュータ装置へいくつかのアクセスをすることができる。したがって、システム10は、キャリア40が加入者に請求書を発行するのに使用する料金と異なる料金の加入者の請求可能なイベントのトランザクションについて、キャリア40に後で請求書を発行することができる。サードパーティの製造者および開発者の支払いが自動的にないならば、システム10は、キャリア（または無線装置の加入者）からの支払いを受取るまで待ち、その後は、必要に応じて、多数のキャリアからの支払いを集約し、トランザクションのメンバーである全サードパーティに支払う。さもないと、アプリケーションまたはサービスを1つ以上のキャリア40に販売したサードパーティが、システム10が明細を明らかにすることができるその支払いを、他のパーティと分配することを選択することができる。

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#### 【0020】

したがって、請求書発行サーバ16は、各サードパーティのために全ての支払いを集約することができ、サードパーティへの支払いを1つまたは複数にする。さらに加えて、請求書発行サーバ16、またはそれと併用される別のコンピュータ装置は、外貨への、および外貨からの（送り状送付時と支払い時との間の適切な通貨の収益／損失を含む）支払いの換金、（米国または外国の）適切な税金の天引き、並びにリベートまたは価格付け奨励金のような、請求可能なイベントに対する個々のサードパーティへの支払いのパラメータを適応させることができる。

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#### 【0021】

サードパーティのアプリケーションダウンロードサーバ30から無線装置12、18、20、22へ与えられる可能なサービスを示すために、図3は、メニュー62を表示したディスプレイ13の部分図60であり、メニュー62には、ダウンロードサーバ30との潜在的な対話が載せられている。無線装置に表示するための単純なデータは、利用できるニュースセクション64に示されていて、無線装置は、データへの単純なアクセスに対して支払う。さらに加えて、サードパーティのアプリケーションダウンロードサーバ30から無線装置12、18、20、22へダウンロードできる複数のアプリケーションは、セクション66に示されている。無線装置の加入者（エンドユーザであっても、そうでなくてもよい）は、アプリケーションの1つ以上がダウンロードされると、個別に請求される。

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#### 【0022】

通信セクション68がエンドユーザに表示され、無線ネットワーク14上での他の装置との種々の通信方法が与えられる。通信の使用に対する請求可能なイベントは、1回当たりの通信、例えば、eメール、通信されるデータのサイズ、または通信時間に基づくことができる。無線装置12、18、20、22が技術的に調整可能なパラメータをアップグレード、最適化、または修正できるようにする装置ツールセクション70も表示される。例えば、サードパーティのアプリケーションサーバ30により性能診断を行なうことができ、それにしたがって無線装置12、18、20、22からスタンドアロンサーバ32のようなサーバへ動作データを送ることによって、装置の進行中の動作を変更することができ、サーバ32は、ソフトウェアコマンドを使用することによって、無線装置の動作を操作することができる。診断ツールの使用に対して無線装置の加入者に請求書を発行することができる。さらに加えて、ソフトウェアのパッチ、および他のソフトウェアの修正またはアップグレードをツールセクション70上に表示して、無線装置12、18、20、22が、コンピュータプラットフォーム50上に最新バージョンのソフトウェアを維持できるようにすることができる。

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#### 【0023】

1つ以上の無線装置12、18、20、22の請求可能なイベントのデータは、最後に、請求書発行サーバ16に集められ、請求書発行サーバ16は、各無線装置の請求書発行情報の明細を明らかにする。図2に具体化されているように、請求書発行情報は、最後に、キャリアネ

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ットワークの加入者へ請求書を発行するためにキャリアネットワーク40へ与えられる。しかしながら、請求書発行サーバ16は、無線装置のデータ34の情報にアクセスでき、無線装置の加入者への請求書を自分で生成することができる。請求可能なイベントのデータが最後に請求書発行サーバ16に集められる一方で、サードパーティのコンピュータ装置（アプリケーションダウンロードサーバ30）が請求可能なイベントのデータを集めて、それを請求書発行サーバ16に定期的に伝送することもできる。サードパーティのコンピュータ装置は、請求可能なイベントが完了したとき、請求書発行サーバ16から照会されたとき、またはアクティブ状態中に所定の時間間隔で、例えば、30分ごとに、請求可能なイベントのデータを請求書発行サーバ16へ伝送することができる。また、請求書発行サーバ16が、集められた請求可能なイベントのデータに基づいて、無線装置12、18、20、22の請求書を生成すると、生成された請求書を、請求書発行サーバ16から、無線ネットワーク14上の別のコンピュータ装置（例えば、その加入者に請求書を発行するときにキャリアによって使用されるキャリアネットワーク40上の装置）へ伝送することができる。

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**【0024】**

図4は、サードパーティのコンピュータアプリケーションダウンロードサーバ30のコンピュータプラットフォーム上で実行される処理の1つの実施形態を示すフローチャートであり、請求可能なイベントのデータは、イベントが完了したときに、請求書発行サーバ16へ伝送されるか、または記憶され、要求に応じて、請求書発行サーバ16へ伝送される。ステップ80に示されているように、サードパーティのアプリケーションダウンロードサーバ30は、無線装置12、18、20、22からアクセスの試みを受信し、決定82に示されているように、アクセスの試みがそれ自体で請求可能なイベントであるかどうかを判断する。決定82において、アクセスが請求可能なイベントであるときは、ステップ84に示されているように、サードパーティのアプリケーションダウンロードサーバ30は、請求可能なイベントのデータを記憶するか、または請求書発行サーバ16へデータを伝送するか、あるいはこの両者を行う。そうはなくて、決定82においてアクセスの試みが請求可能でないとき、または請求可能なイベントのデータを記憶または伝送するステップ84の後では、ステップ86に示されているように、ダウンロードの試みが受信されたかどうか判断される。

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**【0025】**

決定86において、ダウンロードの試みが検出されなかったときは、処理は決定94へ進み、決定94については、ここで別途記載する。決定86において、ダウンロードの試みが検出されたときは、決定88に示されているように、ダウンロードの試みが請求可能であるかどうか判断される。決定88において、ダウンロードの試みが請求可能なイベントであるときは、ステップ90に示されているように、サードパーティのアプリケーションダウンロードサーバ30は請求可能なイベントのデータを記憶するか、またはデータを請求書発行サーバ16へ送るか、あるいはこの両者を行う。そうはなくて、決定88においてダウンロードの試みが請求可能でないとき、または請求可能なイベントのデータを記憶または伝送するステップ90の後では、ステップ92に示されているように、要求されたアプリケーションが無線装置12、18、20、22へダウンロードされる。

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**【0026】**

ステップ92においてアプリケーションがダウンロードされた後、または決定86においてアプリケーションのダウンロードの試みが受信されなかったときは、決定94に示されているように、サードパーティのアプリケーションダウンロードサーバ30上に常駐しているアプリケーションの実行が試みられたかどうか判断される。ステップ94において、アプリケーションの実行が試みられなかったときは、処理は決定100へ進み、決定100については、別途詳しく記載する。決定94においてアプリケーションの実行が試みられたときは、決定96において、実行の試みが請求可能であるかどうかについて判断される。決定96において、実行の試みが請求可能なイベントであるときは、ステップ98に示されているように、サードパーティのアプリケーションダウンロードサーバ30は、請求可能なイベントのデータを記憶するか、またはデータを請求書発行サーバ16へ伝送するか、あるいはこの両者を行う。そうはなくて、決定96においてダウンロードの試みが請求可能でないとき、請求

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可能なイベントのデータを記憶または伝送するステップ98の後、あるいは決定94においてアプリケーションの実行が試みられなかったときは、決定100に示されているように、請求書発行サーバ16が、サードパーティのアプリケーションダウンロードサーバ30から、記憶されている請求可能なイベントのデータを要求したかどうか判断される。決定100において、記憶されている請求可能なイベントのデータが要求されたときは、ステップ102に示されているように、記憶されている請求可能なイベントのデータが請求書発行サーバ16へ伝送され、無線装置のアプリケーションへのアクセスの処理またはスレッドは終了する。そうではなくて、ステップ100において、請求可能なイベントのデータの伝送の要求が受信されなかったときは、処理は終了する。図4の処理は、無線装置12、18、20、22が、図3のメニュー62のセクション66内のアプリケーションへのアクセスを試みる時のように、無線装置12、18、20、22がアクセスを試みる時に、再び行われる。

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**【0027】**

図5は、請求書発行サーバ16上で実行される処理の1つの実施形態を示すフローチャートであり、請求書発行サーバ16は、サードパーティのアプリケーションダウンロードサーバ30のようなサードパーティのコンピュータ装置における無線装置12、18、20、22の請求可能なイベントに対する請求書を生成する要求を受信し、各無線装置12、18、20、22の請求可能なイベントのデータを集め、処理し、請求書発行情報を生成し、キャリア40か、または無線装置の他の請求書発行エンティティへ伝送し、その各コンピュータ装置における請求可能なイベントに対してサードパーティに支払うことができる。処理またはスレッドにおいて、ステップ110に示されているように、請求書発行サーバ16は、無線装置12、18、20、22の請求可能なイベントに対する請求書を生成する要求を受信する。その後で、請求書発行サーバ16は、ステップ112に示されているように、サードパーティのコンピュータ装置（サーバ30および32）に、記憶されている請求可能なイベントのデータを伝送するように指示し、決定114に示されているように、各無線装置の請求可能なイベントのデータが受信されたかどうかについて判断する。

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**【0028】**

決定114において、個々の無線装置の請求可能なイベントのデータが受信されなかったときは、その無線装置の請求可能なイベントを検索するために、エラーが戻される。そうではなくて、請求書発行情報が要求された無線装置12、18、20、22の請求可能なイベントの全てが得られると、ステップ118に示されているように、サードパーティの請求可能なイベントの請求書発行情報が生成され、ステップ120に示されているように、請求書発行情報がキャリアへ伝送される。図5の実施形態は、キャリアが、最後に、全てのサードパーティのサービスに対して無線装置12、18、20、22の加入者に請求書を発行することを仮定しているが、ステップ120は、無線装置の加入者へも請求書を伝送することを許している。これが取り入れられると、ステップ122に示されているように、請求書発行サーバが、サードパーティのコンピュータ装置における無線装置12、18、20、22の請求可能なイベントに対してサードパーティに支払い、その後で、請求書発行処理が終了する。

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**【0029】**

したがって、システム10は、無線ネットワーク14への加入者の無線装置12、18、20、22に与えられたサードパーティのアプリケーションおよびサービスに対して請求書を発行する方法であって、無線装置12、18、20、22と、サードパーティのアプリケーションダウンロードサーバ30のようなサードパーティのコンピュータ装置との対話によって請求可能なイベントを発生させるステップと、図5のステップに示されているように、請求書発行サーバにおいて、請求可能なイベントを請求可能なイベントのデータへ集約するステップと、その後で、請求書発行サーバ16において請求可能なイベントのデータに基づいて各請求可能なイベントに対して適切な無線サービスの加入者へ請求書を発行するステップとを含む方法を提供することが分かるであろう。方法は、サードパーティの1つ以上のコンピュータ装置において行われた請求可能なイベントに対してサードパーティに支払うステップを含むことができる。

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**【0030】**

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請求可能なイベントを請求可能なデータへ集約するステップは、請求書発行サーバ16において、またはサードパーティのコンピュータ装置において行なうことができ、したがって方法は、図5のステップ112に示されているように、サードパーティのコンピュータ装置から請求書発行サーバ16へ請求可能なイベントのデータを伝送するステップも含む。その代りに、請求可能なイベントのデータを伝送するステップは、請求書発行サーバ16から、スタンドアロンサーバ32のような、無線ネットワーク14上の別のコンピュータ装置、またはキャリアネットワーク40上の別のコンピュータ装置へ請求書を伝送してもよい。無線加入者へ請求書を発行するように具体化されるときは、方法は、例えば、無線装置のデータベース34から無線装置の加入者のデータを得るステップと、図5のステップ118に示されているように、請求可能なイベントのデータに基づいて、請求書発行サーバにおいて無線装置の請求書を生成するステップとを含むことができる。

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#### 【0031】

1つ以上の請求可能なイベントを発生させるステップは、無線ネットワーク14上のサードパーティのアプリケーションダウンロードサーバ30から無線装置12、18、20、22へアプリケーションをダウンロードすることによって、図4の決定94に示されているように、無線装置上でアプリケーションを実行することによって、または図4に示されているように、無線ネットワーク14上で無線装置12、18、20、22がサードパーティのコンピュータ装置上に常駐しているアプリケーションへアクセスすることによって、請求可能なイベントを発生させることができる。図5に示されているように、方法は、請求書発行サーバ16からサードパーティのコンピュータ装置に、請求可能なイベントのデータを請求書発行サーバ16へ伝送して、請求書発行処理を開始するように指示するステップも含むことができる。

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#### 【0032】

請求書発行サーバ16またはサードパーティのコンピュータ装置（サーバ30および32）のような、コンピュータ装置のコンピュータプラットフォーム上で実行可能な方法を考慮して、本発明は、コンピュータ読み出し可能媒体に常駐しているプログラムを含み、プログラムは、方法のステップを行うコンピュータプラットフォームをもつサーバまたは他のコンピュータ装置に命令する。コンピュータ読み出し可能媒体は、請求書発行サーバ16のメモリであっても、または請求可能なイベントのデータベース28のような連結データベースであってもよい。さらに加えて、コンピュータ読み出し可能媒体は、磁気ディスクまたはテープ、光ディスク、ハードディスク、フラッシュメモリ、あるいはこの分野において知られている他の記憶媒体のような、無線装置のコンピュータプラットフォーム上にロードできる二次記憶媒体であってもよい。

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#### 【0033】

図4および5に関連して、方法は、例えば、無線装置のコンピュータプラットフォーム50、請求書発行サーバ16、およびサードパーティのアプリケーションダウンロードサーバ30のような、無線ネットワーク14の一部を動作して、一連の機械読み出し可能な命令を実行することによって実施される。命令は、種々のタイプの信号を記録する、またはデータを記憶する一次、二次、または三次媒体内にあってもよい。媒体は、例えば、無線ネットワーク14の構成要素によってアクセス可能か、またはその中にあるRAM（図示されていない）を含む。命令は、RAM、ディスク、または他の二次記憶媒体内に収められているか、DASD記憶装置（例えば、従来の“ハードドライブ”またはRAIDアレイ）、磁気テープ、電子読み出し専用メモリ（例えば、ROM、EPROM、またはEEPROM）、フラッシュメモリカード、光記憶装置（例えば、CD-ROM、WORM、DVD、デジタル光テープ）、紙の“穿孔”カード、またはデジタルおよびアナログ伝送媒体を含む他の適切なデータ記憶装置媒体のような、種々の機械読み出し可能なデータ記憶媒体上に記憶される。

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#### 【0034】

これまでの開示は、本発明の例示的な実施形態を示しているが、ここでは、本発明の特許請求項によって定められているように、本発明の技術的範囲から逸脱しないならば、種々の変更および修正を行うことができることに注意すべきである。さらに加えて、本発明

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の要素は、単数形で記載されているか、または権利を主張されているが、単数形に制限すると明確に記載されていない限りは、複数形も意図されている。

【図面の簡単な説明】

【0035】

【図1】無線ネットワーク、コンピュータハードウェア、および無線装置請求書発行システム内で使用できる無線装置の模式図。

【図2】無線電話が無線ネットワークを横切ってサーバおよび他のコンピュータ装置と対話するときに発生する請求可能なイベントを追跡する請求書発行システムをもつセルラ遠隔通信ネットワークを示すブロック図。

【図3】無線ネットワークを横切ってサードパーティのアプリケーションダウンロードサーバと連絡をとるときに、無線装置のエンドユーザに示される対話メニュー、およびディスプレイ上に表示される複数の対話のオプションを示す図。

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【図4】サードパーティコンピュータのアプリケーションダウンロードサーバのコンピュータプラットフォーム上で実行される処理の1つの実施形態であって、請求可能なイベントデータが、イベントが完了したときに、請求書発行サーバへ伝送されるか、あるいは記憶されて、要求に応じて、請求書発行サーバへ伝送されることを示すフローチャート。

【図5】請求書発行サーバ上で実行される処理の1つの実施形態であって、請求書発行サーバが、サードパーティのコンピュータ装置における無線装置の請求可能なイベントの請求書を生成する要求を受信し、各無線装置の請求可能なイベントのデータを集めて、処理し、キャリア、または無線装置のための他の請求書発行エンティティへ伝送することができる請求書発行情報を生成し、各コンピュータ装置における請求可能なイベントに対してサードパーティに支払うことを示すフローチャート。

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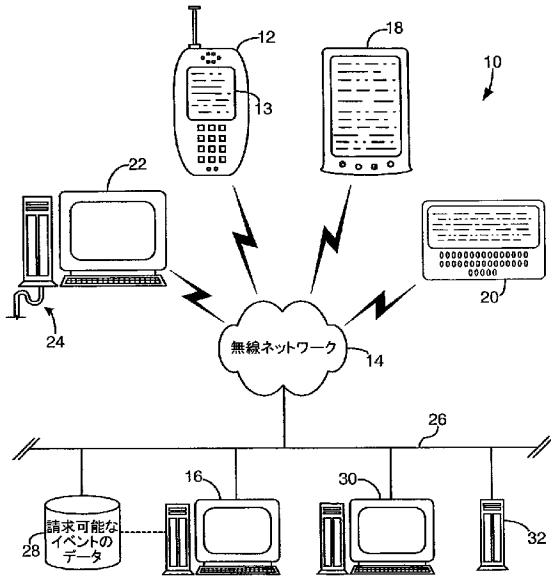
【符号の説明】

【0036】

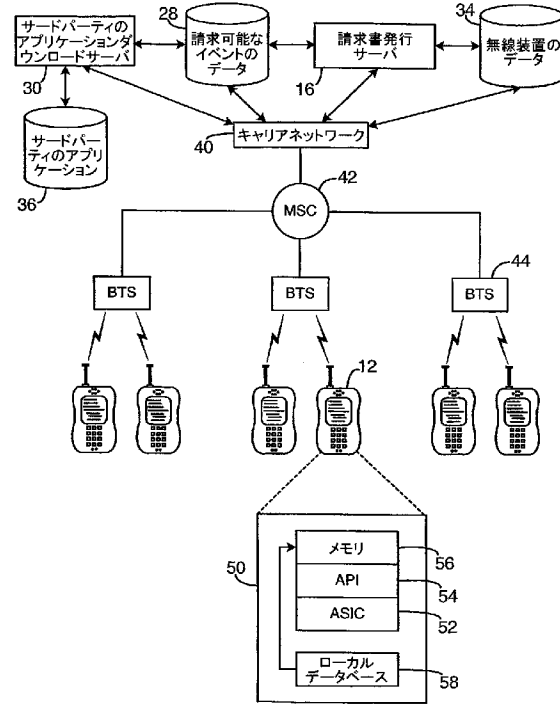
10・・・システム、12、18、20、22・・・セルラ電話装置、13・・・グラフィックディスプレイ、16・・・請求書発行サーバ、24・・・ワイヤード接続、26・・・ローカルサーバ側ネットワーク、30・・・アプリケーションダウンロードサーバ、32・・・スタンドアローンサーバ、50・・・コンピュータプラットフォーム、60・・・部分図、62・・・メニュー、64・・・ニュースセクション、66・・・アプリケーションセクション、68・・・通信セクション、70・・・装置ツールセクション。

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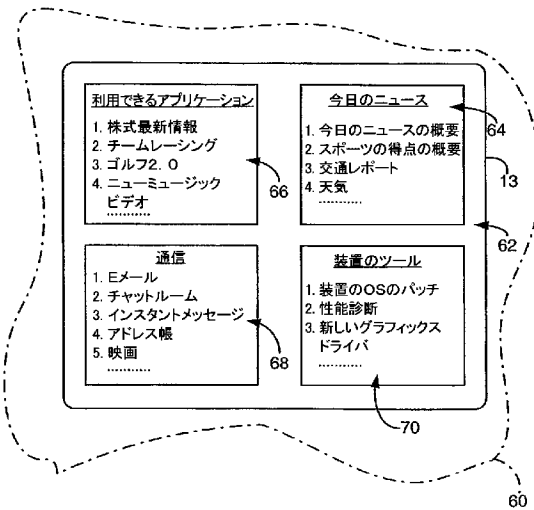
【図 1】



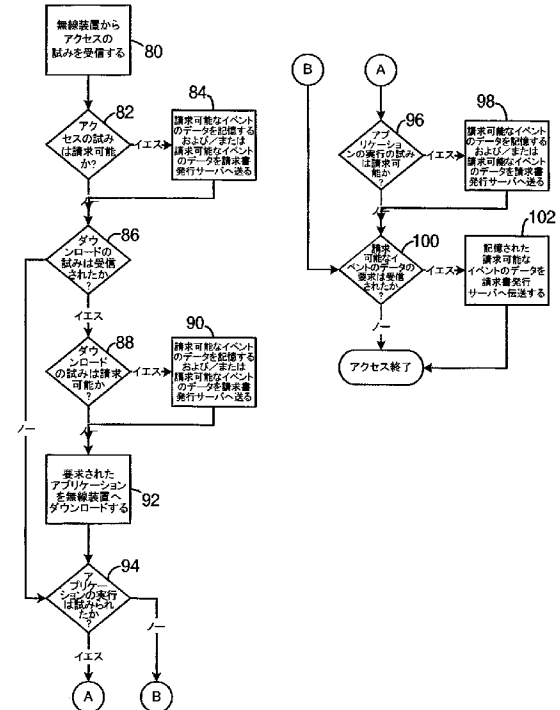
【図 2】



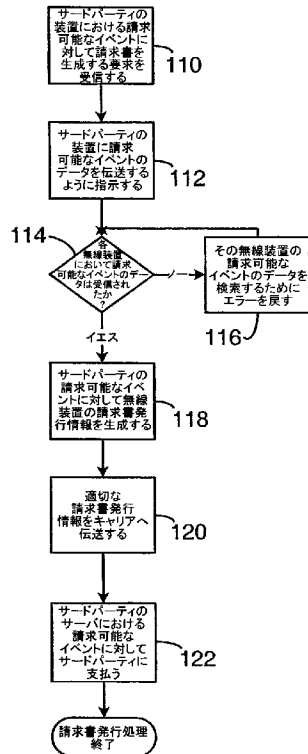
【図 3】



【図 4】



【図 5】



## 【国際調査報告】

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PCT/US03/27014

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04M 011/00; H04M 003/42; H04M 003/00

US CL : 455/406, 455/419, 455/414.100

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 455/406, 455/419, 455/414.100Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
455/407, 406; 370/352, 356; 379/114.06, 114.07; 455/408; 705/1; 709/217, 218, 219; 455/405, 406, 414.1, 418, 419Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EAST

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P -- Y,P	2002/0128984 A1 (MEHTA et al) 12 September 2002, see Fig. 1, item 102, page 1, paragraph 5	1-8, 11-13, 15-19, 21-25, 28, 30-32, 9-10, 14, 20, 26, 27, 29, 33
Y	2003/0046396 A1 (RICHTER et al) 06 March 2003, see page 41, paragraph 383	1-8, 11-13, 15-19, 21-25, 28, 30-32, 9-10, 14, 20, 26, 27, 29, 33
A	US 6,628,934 B2 (ROSENBERG et al) 30 September 2003, see entire document.	1-33
A	US 6,549,770 B1 (MARRAN) 15 April 2003, see entire document.	1-33
A	2003/0172165 A3 (XU et al) 11 September 2003, see entire document.	1-33
A	2002/0069176 A1 (NEWMAN) 06 June 2002, see entire document.	1-33
A	2002/0131404 A1 (MEHTA et al) 19 September 2002, see entire document.	1-33

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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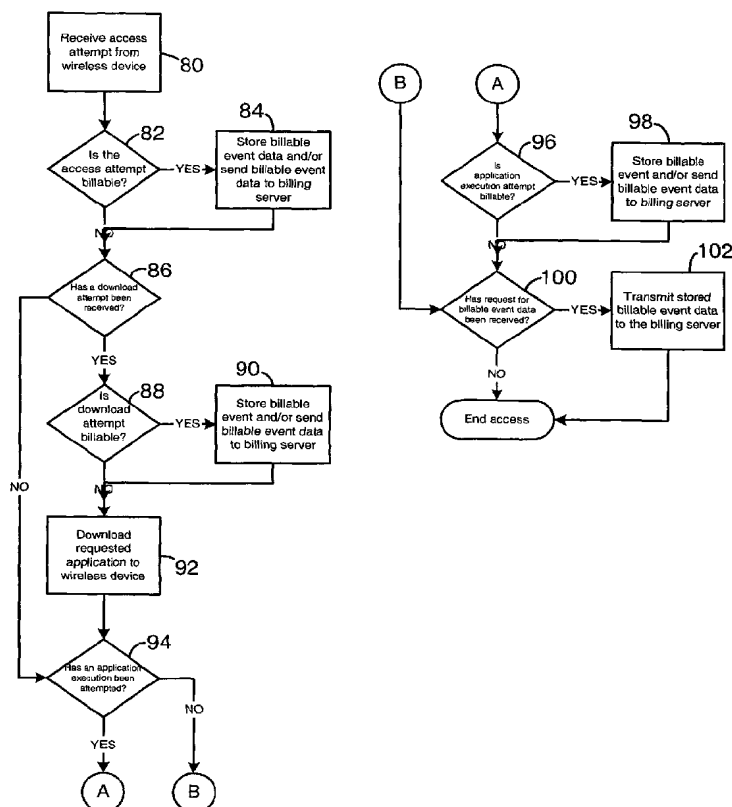
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(54) Title: SYSTEM AND METHOD FOR THIRD PARTY APPLICATION SALES AND SERVICES TO WIRELESS DEVICES



(57) Abstract: A system, method, and computer program for billing wireless device subscribers for their interaction with applications and services resident on third party computer devices that are accessible through a wireless network. The wireless devices, such as cellular telecommunication devices, communicate with other computer devices across a wireless network and an end-user thereof, who is not necessarily the subscriber for the wireless service, can selectively download and execute software applications. Third party computer devices, such as application download servers, are accessible on the wireless network and selectively provide applications and services to the wireless devices, and the interaction of the wireless devices with the third party computer devices causes billable events to occur, and a billing server gathers the billable event data, generates billing for the wireless device subscribers, and effects payment of the third parties for billable events at the computer devices of that third party.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## SYSTEM AND METHOD FOR THIRD PARTY APPLICATION SALES AND SERVICES TO WIRELESS DEVICES

### BACKGROUND OF THE INVENTION

#### *I. Field of the Invention*

[0001] The present invention generally relates to wireless devices and wireless networks. More particularly, the invention relates to a system and method that permits third party application sales and services to wireless telecommunication devices across a wireless network, and the system properly accounts for and bills wireless service subscribers, and provides the appropriate proceeds to the third party for sold applications and services.

#### *II. Description of the Related Art*

[0002] Wireless devices, such as cellular telephones, communicate packets including voice and data over a wireless network. In existing wireless telecommunication systems, such as cellular telecommunication systems, fees are charged to the subscriber for the initial activation of a telecommunication device and then fees can be charged for ongoing airtime and device usage. However, existing systems typically do not account for other activities at the telecommunication device beyond airtime usage.

[0003] Further, if the subscriber of the wireless device desires to download and use a software application or upgrade the functionality of the telecommunication device, the user will typically either call a service provider or contact the service provider through another electronic means, such as through a separate Internet access. In some instances, the service provider can transmit the application to the wireless device across the wireless network (through a one time direct access download) or allow the user access a network site with the wireless device through the wireless network and at such site the application is downloadable or accessible to the subscriber. Otherwise service personnel of the provider must have physical access to the telecommunication device to install the software or upgrade the components thereof.

[0004] The existing systems for monitoring and billing for wireless telecommunication device activity thus do not allow a service provider to bill or account for activities by the wireless device that not occur on the computer devices of that provider. In order to provide any additional billed services to the subscriber or end-user of the telecommunication device, the service provider must have the subscriber contact and



use the computer devices of the service provider which greatly limits the value-added service that a provider can make available to its subscribers. Accordingly, it is to a system and method that allows the monitoring and billing of wireless device activity that the present invention is primarily directed.

### **SUMMARY OF THE INVENTION**

[0005] The present invention is a system, method, and computer program for billing wireless device subscribers for their interaction with applications and services resident on third party computer devices that are accessible through a wireless network. The wireless devices, such as cellular telecommunication devices, communicate with other computer devices across a wireless network and an end-user thereof, who is not necessarily the subscriber for the wireless service for that wireless device, can selectively download and execute software applications on the computer platform. Also on the wireless network are third party computer devices, such as application download servers, that selectively provide value-added applications and services to the wireless devices and the interaction of the wireless devices with the applications of the third party computer devices causes billable events to occur, such as an application download execution, or access. A billing server ultimately gathers the billable event data across the wireless network, generates billing for the wireless device subscribers, and effects payment of the third party for the billable events of wireless devices with the computer devices of the third party.

[0006] The system includes one or more wireless devices where each include a computer platform and an end-user thereof, with one or more third party computer devices that selectively provide applications and services to the one or more wireless devices across the wireless network, and the interaction of the wireless devices with the applications or services of the third party computer devices causes one or more billable events to occur for the interacting wireless device. At least one billing server is in the system that gathers at least the billable event data from wireless device interaction with the one or more third party computer devices, and also effects payment of the third party based upon the gathered billable event data for the billable events at the third parties' computer devices. In one embodiment, the billing server also generates a bill for each wireless device for the billable events.

[0007] The method of billing for third party applications and services provided to the wireless devices of subscribers to a wireless network includes the steps of causing a billable event to occur through wireless device interaction with a third party computer device, aggregating the billable events into billable event data at a billing server, billing the appropriate subscriber for each billable event based upon the billable event data at the billing server, and effecting payment of the third party for the billable events at the third party computer device. The method can also include the steps of billing the wireless subscriber from the billing server and prompting the third party computer devices to transmit gathered billable event data to the billing server.

[0008] The system and method accordingly allow wireless service providers the ability to provide and bill for wireless telecommunication device activity, such as application download and execution, with third party computer devices accessible through the wireless network. The system and method accordingly give an advantage to the service provider in that the provider can give its subscribers access to additional value-added services of third parties and effectively capture and share the revenue from the billed services. Moreover, the billing system does not require the subscriber to contact the service provider or the third party to receive or access the additional service.

[0009] Other objects, advantages, and features of the present invention will become apparent after review of the hereinafter set forth Brief Description of the Drawings, Detailed Description of the Invention, and the Claims.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0010] Fig. 1 is a representative diagram of a wireless network and the computer hardware and wireless devices that can be used within the wireless device billing system.

[0011] Fig. 2 is a block diagram illustrating a cellular telecommunication network with the billing system tracking billable events occurring on wireless telephones that interact with servers and other computer devices across the wireless network.

[0012] Fig. 3 is an interactive menu that is presented to end-users of the wireless device when contacting a third party application download server across the wireless network, and a plurality of options for interaction is represented on the display.

[0013] Fig. 4 is a flowchart illustrating one embodiment of the process executing on the computer platform of the third party computer application download server wherein

billable event data is either transmitted to the billing server as the events are completed, or stored and transmitted to the billing server upon request.

[0014] Fig. 5 is a flowchart illustrating one embodiment of the process executing on the billing server that receives a request to generate billing for the billable events of the wireless devices at third party computer devices, and the billing server gathers and processes the billable event data for each of the wireless devices to create billing information that can be transmitted to the carrier or other billing entity for the wireless devices, and effects payment of the third parties for the billable events at their respective computer devices.

### DETAILED DESCRIPTION OF THE INVENTION

[0015] With reference to the figures in which like numerals represent like elements throughout, Fig. 1 illustrates one embodiment of the present inventive system 10 for tracking billable events occurring through wireless devices, such as cellular telephone 12, in communication across a wireless network 14, with third party computer devices, such as a third party application download server 30, that selectively downloads software applications or other data to the wireless devices across a wireless communication portal or other data access to the wireless network 14. In developing wireless networks 14, if the end-user of the wireless device desires to download and use a software application, the end-user will attempt to connect to an application download server, either the carrier's server or a third party application download server 30, through bridging a communication connection to the wireless network 14, and attempt to access and download the desired software application. Once the wireless device contacts the application download server 30, an initial contact is made and the application download server 30 can determine what applications and data are available to that wireless device 12,18,20,22 and send the appropriate information, such as a menu (Fig. 3), for display on the wireless device 12,18,20,22 so the end-user can learn of the available applications and services.

[0016] As shown here, the wireless device can be a cellular telephone 12, with a graphics display 13, a personal digital assistant 18, a pager 20 with a graphics display, which is shown here as a two-way text pager, or even a separate computer platform 22 that has a wireless communication portal, and may otherwise have a wired connection 24 to a network or the Internet. The system 10 can thus be performed on any form of remote computer module including a wireless communication portal, including without

limitation, wireless modems, PCMCIA cards, access terminals, personal computers, access terminals, telephones without a display or keypad, or any combination or sub-combination thereof. Further, the term "application" as used herein is intended to encompass executable and nonexecutable software files, raw data, aggregated data, patches, and other code segments.

[0017] In the system 10, one or more wireless devices 12,18,20,22 that each selectively communicate with other computer devices across a wireless network 14, an end-user thereof who can selectively download and execute software applications. The wireless devices 12,18,20,22 to one or more third party computer devices, such as third party application download server 30 and stand-alone server 32, and the interaction of the wireless devices with the applications of the third party computer devices causes one or more billable events, and at least one billing server 16 gathers at least the billable event data for the billable events from wireless device interaction with the one or more third party computer devices (servers 30 and 32). The billable events can be the purchase, download and/or execution of an application, access to a menu, wireless device tools and diagnosis, or any other value-added data interaction between the wireless device 12,18,20,22 and the third party computer device (server 30 and 32). The billing server 16 then effects payment of the third party for the billable events at that third parties servers, as is more further described herein.

[0018] The one or more wireless devices 12,18,20,22, typically at the direction of an end-user operating the device, selectively communicate with other computer devices across a wireless network, application download server 30 or third party stand alone server 32, both shown here on a local server-side network 26 with other computer elements in communication with the wireless network 14, such as a billable event database 28 that contains the billable event data for the wireless devices. The application download server 30 and a stand-alone server 32 provide value-added services to the wireless devices, such as downloadable applications and other interaction, such as live stock quotes, news, and interactive games. All of the components can work in tandem to gather data relative to billable events of the wireless devices 12,18,20,22 and aggregate the billable event data at the billing server 16 as is further described herein. However, it should be noted that all server-side functions can be performed on one server, such as billing server 16. Further, any computer or server-

side computer platform can provide separate services and processes to the wireless devices 12,18,20,22 across the wireless network 14.

[0019] Fig. 2 is a block diagram that more fully illustrates the components of the wireless network 14 and interrelation of the elements of the system 10. The wireless network 14 is merely exemplary and can include any system whereby remote modules, such as wireless devices 12,18,20,22, communicate over-the-air between and among each other and/or between and among components of a wireless network 14, including, without limitation, wireless network carriers and/or servers. The server side components are a billing server 16, third party application download server 30, a billable event database 28, a wireless device database 34, and a third party applications database 36. Other server-side components will be present on the cellular data network with any other components that are needed to provide cellular telecommunication services. The server-side components as embodied in Fig. 2 can by themselves create a billing system 10 solely through tracking applications downloaded from the third party application download server 30 and the billing for the download will be generated through correlation of the billable event database 28 and wireless device database 34 by the billing server 16. The third party application download server 30 can have a separate third party applications database 36 that provides applications and other services to the wireless devices 12,18,20,22. With the use of third party hardware readily scalable, the number of computer devices that can be made accessible to the wireless devices is theoretically unlimited.

[0020] The server-side components communicate with a carrier network 40 through a data link, such as the Internet, a secure LAN, WAN, or other network. The carrier network 40 controls messages (generally in the form of data packets) sent to a messaging service controller ("MSC") 42. The carrier network 40 communicates with the MSC 42 by a network, the Internet and/or POTS ("plain ordinary telephone system"). Typically, the network or Internet connection between the carrier network 40 and the MSC 42 transfers data, and the POTS transfers voice information. The MSC 42 is connected to multiple base stations ("BTS") 44. In a similar manner to the carrier network, the MSC 42 is typically connected to the BTS 44 by both the network and/or Internet for data transfer and POTS for voice information. The BTS 44 ultimately broadcasts messages wirelessly to the wireless devices, such as cellular telephone 12, by short messaging service ("SMS"), or other over-the-air methods known in the art.

[0021] The wireless device, such as cellular telephone 12, has a computer platform 50 that can receive and execute software applications transmitted from the application download server 16. The computer platform 50 includes, among other components, an application-specific integrated circuit (“ASIC”) 52, or other processor, microprocessor, logic circuit, programmable gate array, or other data processing device. The ASIC 52 is installed at the time of manufacture of the wireless device and is not normally upgradeable. The ASIC 52 or other processor executes an application programming interface (“API”) layer 54 that interfaces with any resident programs in the memory 56 of the wireless device. The memory can be comprised of read-only or random-access memory (RAM and ROM), EPROM, EEPROM, flash cards, or any memory common to computer platforms. The computer platform 50 also includes a local database 58 that can hold the software applications not actively used in memory 56, such as the software applications downloaded from the third party application download server 16. The local database 58 is typically comprised of one or more flash memory cells, but can be any secondary or tertiary storage device as known in the art, such as magnetic media, EPROM, EEPROM, optical media, tape, or soft or hard disk.

[0022] Cellular telephones and telecommunication devices, such as cellular telephone 12, are being manufactured with increased computing capabilities and are becoming tantamount to personal computers and hand-held personal digital assistants (“PDAs”). These “smart” cellular telephones allow software developers to create software applications that are downloadable and executable on the processor, such as ASIC 52, of the cellular device. The wireless device, such as cellular telephone 12, can download many types of applications, such as games and stock monitors, or simply data such as news and sports-related data. The downloaded data or executed applications can be immediately displayed on the display 13 or stored in the local database 58 when not in use. The software applications can be treated as a regular software application resident on the wireless device 12,18,20,22, and the user can selectively upload stored resident applications from the local database 58 to memory 56 for execution on the API 54. The user of the wireless device 12,18,20,22 can also selectively delete a software application from the local database 58. As a result, end-users of cellular telephones 12 can customize their telephones with programs, such as games, printed media, stock updates, news, or any other type of information or program available for download from application download servers through the wireless network 14.

- [0023] The use of these value-added services of third parties by the wireless device 12,18,20,22 cause billable events for which the wireless network service provider will bill the subscriber of the wireless device, who is not necessarily the end-user of the wireless device at the time of the billable event. The billable events typically occur from the end-user conducting some activity with applications provided from the third party application download server 30. Examples of billable events, include but are not to be limited to, downloading an application from a third party application download server 30 on the wireless network 14 to the wireless device computer platform 50; the execution of an application on the wireless device 12,18,20,22; accessing an application resident on another computer device on the wireless network 14, such as stand-alone server 32 through application download server 30, or a database such as third party application database 36; or other parameter of execution or interaction therewith.
- [0024] The system 10 allows a third party, such as an independent software vendor or developer, either through the third parties own computer devices or through a network carrier 40 servers, to provide its software applications as downloadable to the wireless device. A multitude of computer devices can be involved in the ultimate delivery of applications and services, and the wireless device 12,18,20,22 can make several accesses to one or more third party computer devices. The system 10 can thus after-bill the carrier 40 for their subscriber billable event transactions, which typical is a different fee than what the carrier 40 will use to bill their subscribers. Unless the payment of the third party vendor and developers is automatic, the system 10 will wait until payment from the carrier (or wireless device subscriber) are received, and then aggregate payments from multiple carriers as necessary and pay all third parties that are a member of the transactions. This provides the capability for the third party that otherwise sells an application or service to one or more carriers 40 to elected to share its payment with other parties, which the system 10 can account for.
- [0025] The billing server 16 can therefore aggregate all payments due each third party and creates a single or multiple payments to the third party. Moreover, the billing server 16, or another computer device in conjunction therewith, can accommodate any parameters of payment of a particular third party for billable events, such as converting payment to and from foreign currencies (with appropriate currency gain/loss between time of invoice and payment), withholding of any appropriate taxes (US or foreign), and any rebates or pricing incentives.

[0026] To illustrate the possible services provided from the third party application download server 30 to the wireless devices 12,18,20,22, Fig. 3 is a partial view 60 of the display 13 having an menu 62 displayed thereon listing potential interactions with the download server 30. Simple data for display at the wireless device is shown in an available news section 64, wherein the wireless device will pay for simple access to the data. Further, a plurality of applications downloadable to wireless devices 12,18,20,22, from the third party application download server 30 is shown in section 66. The subscriber for the wireless device (end-user or not) will be discretely billed if one or more of the applications are downloaded.

[0027] A communications section 68 is presented to the end-user wherein a variety of methods of communication with other devices on the wireless network 14 are provided. The billable event for use of the communication can be based per communication, such as e-mail, size of data communicated, or based upon the duration of a communication. A device tool section 70 can also be present that allows the wireless device 12,18,20,22 to upgrade, optimize, or fix any technically adjustable parameter. For example, a performance diagnosis can be effected from the third party application server 30 whereby the ongoing operation of the device can be alter through passing operational data from the wireless device 12,18,20,22 to the server, such as stand alone server 32, and the server 32 can manipulate the wireless device operation through the use of software commands. The wireless device subscriber can be billed for the use of any diagnosis tool. Additionally, software patches and other software fixes or upgrades can be posted to the tools section 70 to allow the wireless device 12,18,20,22 to maintain the most current versions of software on the computer platform 50.

[0028] The billable event data for the one or more wireless devices 12,18,20,22 is ultimately gathered at billing server 16 such that the billing information for each wireless device that the billing server 16 accounts for. As embodied in Fig. 2, the billing information will ultimately be provided to the carrier network 40 for billing to the carrier's subscriber. However, the billing server 16 itself can generate a bill to the wireless device subscriber, for whom it can access the information of the wireless device data 34. While the billable event data is ultimately gathered at the billing server 16, the third party computer device (application download server 30) can also gather the billable event data and transmit it periodically to the billing server 16. The third party computer device can transmit billable event data to the billing server 16 at the



completion of the billable event, upon query from the billing server 16, or at a predetermined interval of time, e.g. every 30 minutes while active. And if the billing server 16 further generates a bill for a wireless device 12,18,20,22 based upon the gathered billable event data, the generated bill can be transmitted from the billing server 16 to another computer device on the wireless network 14, such as a device on the carrier network 40 for use by the carrier in billing its subscribers.

[0029] Fig. 4 is a flowchart illustrating one embodiment of the process executing on the computer platform of the third party computer application download server 30 wherein billable event data is either transmitted to the billing server 16 as the events are completed, or stored and transmitted to the billing server 16 upon request. The third party application download server 30 receives an access attempt from a wireless device 12,18,20,22, as shown at step 80, and then a determination is made as to whether the access attempt is in itself a billable event, as shown at decision 82. If the access is a billable event at decision 82, then the third party application download server 30 stores the billable event data, or transmits the data to the billing server 16, or both, as shown at step 84. Otherwise, if the access attempt is not billable at decision 82, or after the billable event data storage or transmission step 84, a determination is then made as to whether a download attempt has been received, as shown at decision 86.

[0030] If a download attempt has not been detected at decision 86, the process forwards to decision 94 which is further described herein. If a download attempt has been detected at decision 86, a determination is then made as to whether the download attempt is billable, as shown at decision 88. If the download attempt is a billable event at decision 88, then the third party application download server 30 stores the billable event data, or transmits the data to the billing server 16, or both, as shown at step 90. Otherwise, if the download attempt is not billable at decision 88, or after the billable event data storage or transmission step 90, the requested application is downloaded to the wireless device 12,18,20,22, as shown at step 92.

[0031] After the application has been downloaded at step 92, or if an application download attempt has not been received at decision 86, a determination is made as to whether the execution of an application resident on the third party application download server 30 has been attempted, as shown at decision 94. If an execution of an application has not been attempted at decision 94, then the process forwards to decision 100, which is further described below. If the execution of an application has been attempted at

decision 94, a determination is then made as to whether the execution attempt is billable, as shown at decision 96. If the execution attempt is a billable event at decision 96, then the third party application download server 30 stores the billable event data, or transmits the data to the billing server 16, or both, as shown at step 98. Otherwise, if the download attempt is not billable at decision 96, or after the billable event data storage or transmission step 98, or if an execution of application was not attempted at decision 94, a determination is then made as to whether the billing server 16 has requested the stored billable event data from the third party application download server 30, as shown at decision 100. If the stored billable event data has been requested at decision 100, then the stored billable event data is transmitted to the billing server 16 as shown at step 102 and then the process or thread of application access of the wireless device ends. Otherwise, if the request for transmission of the billable event data has not received at decision 100, then the process ends. The process of Fig. 4 will then reoccur upon an access attempt of the wireless device 12,18,20,22, such as the device attempting to access an application in section 66 of the menu 62 of Fig. 3.

[0032] Fig. 5 is a flowchart illustrating one embodiment of the process executing on the billing server 16 that receives a request to generate billing for the billable events of the wireless devices 12,18,20,22 at third party computer devices, such as third party application download server 30, and the billing server 16 gathers and processes the billable event data for each of the wireless devices 12,18,20,22 to create billing information that can be transmitted to the carrier 40 or other billing entity for the wireless devices, and can effect payment of the third parties for the billable events at their respective computer devices. In the process or thread, the billing server 16 receives a request to generate billing for the billable events of the wireless devices 12,18,20,22, as shown at step 110. Then the billing server 16 prompts the third party computer devices (servers 30 and 32) to transmit their stored billable event data as shown at step 112, and then a determination is made as to whether the billable event data for each wireless device has been received, as shown at decision 114.

[0033] If the billable event data for a particular wireless device has not been received at decision 114, an error is returned for the billable event retrieval for that wireless device. Otherwise, once all of the billable events for the wireless devices 12,18,20,22 for which the billing information is requested has been obtained, the billing information is generated for the third party billable events, as shown at step 118, and the billing

information is then transmitted to the carrier, as shown at step 120. The embodiment of Fig. 5 assumes that the carrier will ultimately bill the subscriber of the wireless device 12,18,20,22 for all third party services, but step 120 could likewise be transmitting a bill to the subscriber of the wireless device. Then, if so embodied, the billing server effects payment of the third parties for the billable events of the wireless devices 12,18,20,22 at that third parties' computer devices, as shown at step 122, after which the billing generation process terminates.

[0034] It can be seen that the system 10 thus provides a method of billing for third party applications and services provided to the wireless devices 12,18,20,22 of subscribers to a wireless network 14, including the steps of causing a billable event to occur through wireless device 12,18,20,22 interaction with a third party computer device, such as third party application download server 30, aggregating the billable events into billable event data at a billing server, as shown in the steps of Fig. 5, and then billing the appropriate wireless service subscriber for each billable event based upon the billable event data at the billing server 16. The method can include the step of effecting payment of the third party for billable events that occurred at the one or more computer devices of that third party.

[0035] The step of aggregating the billable events into billable data can occur at the billing server 16, or at the third party computer device such that the method further includes a step of transmitting the billable event data to the billing server 16 from the third party computer device, as shown in step 122 of Fig. 5. The step of transmitting the billable event data can alternately be transmitting the bill from the billing server 16 to another computer device on the wireless network 14, such as stand-alone server 32 or another computer device on the carrier network 40. If embodied so as to bill the wireless subscriber, the method can then include the steps of obtaining wireless device subscriber data, such as from wireless device database 34, and then generating a bill at the billing server for a wireless device based upon the billable event data, as shown at step 118 of Fig. 5.

[0036] The step of causing one or more billable events can be causing a billable event through the download of an application from a third party application download server 30 on the wireless network 14 to the wireless device 12,18,20,22, through the execution of an application on the wireless device as shown at decision 94 in Fig. 4, or through access of the wireless device 12,18,20,22 to an application resident on a third party

computer device on the wireless network 14, as shown in Fig. 4. As is shown in Fig. 5, the method can also include the step of prompting the third party computer device from the billing server 16 to transmit billable event data to the billing server 16 to start the billing process.

[0037] In view of the method being executable on the computer platform of a computer device such as billing server 16 or third party computer device (servers 30 and 32), the present invention includes a program resident in a computer readable medium, where the program directs a server or other computer device having a computer platform to perform the steps of the method. The computer readable medium can be the memory of the billing server 16, or can be in a connective database, such as billable event database 28. Further, the computer readable medium can be in a secondary storage media that is loadable onto a wireless device computer platform, such as a magnetic disk or tape, optical disk, hard disk, flash memory, or other storage media as is known in the art.

[0038] In the context of Figs. 4 and 5, the method may be implemented, for example, by operating portion(s) of the wireless network 14 to execute a sequence of machine-readable instructions, such as wireless device computer platform 50, the billing server 16, and third party application download server 30. The instructions can reside in various types of signal-bearing or data storage primary, secondary, or tertiary media. The media may comprise, for example, RAM (not shown) accessible by, or residing within, the components of the wireless network 14. Whether contained in RAM, a diskette, or other secondary storage media, the instructions may be stored on a variety of machine-readable data storage media, such as DASD storage (e.g., a conventional "hard drive" or a RAID array), magnetic tape, electronic read-only memory (e.g., ROM, EPROM, or EEPROM), flash memory cards, an optical storage device (e.g. CD-ROM, WORM, DVD, digital optical tape), paper "punch" cards, or other suitable data storage media including digital and analog transmission media.

[0039] While the foregoing disclosure shows illustrative embodiments of the invention, it should be noted that various changes and modifications could be made herein without departing from the scope of the invention as defined by the appended claims. Furthermore, although elements of the invention may be described or claimed in the singular, the plural is contemplated unless limitation to the singular is explicitly stated.

**CLAIMS**

What is claimed is:

1. A system for providing and billing for third party applications and services to the wireless devices of subscribers to a wireless network, comprising:
  - one or more wireless devices that each selectively communicate with other computer devices across a wireless network, each wireless device further including a computer platform and an end-user thereof who can selectively download and execute software applications on the computer platform;
  - one or more third party computer devices that selectively provide applications and services to the one or more wireless devices across the wireless network, the interaction of the wireless devices with the applications of the third party computer devices causing one or more billable events; and
  - at least one billing server that gathers at least billable event data for the billable events from wireless device interaction with the one or more third party computer devices, and the billing server effecting payment of a third party for the billable events of the applications and services of that third party.
2. The system of claim 1, wherein the billing server further generates a bill for each wireless device for the billable events of that wireless device.
3. The system of claim 1, wherein the billable event data is gathered only at the billing server.
4. The system of claim 1, wherein the billing server further generates a bill for each wireless device based upon the gathered billable event data.
5. The system of claim 4, wherein the generated bill is transmitted from the billing server to the network carrier.

6. The system of claim 1, wherein the billable event is the download to the wireless device computer platform of an application from a third party application download server on the wireless network.

7. The system of claim 1, wherein the billable event is the execution of an application on the wireless device.

8. The system of claim 1, wherein the billable event is access to an application resident on a third party computer device.

9. The system of claim 1, wherein the third party computer device gathers billable event data and transmits the gathered billable event data to the billing server.

10. The system of claim 9, wherein the third party computer device transmits billable event data to the billing server upon query from the billing server.

11. A system for providing and billing for third party applications and services on a wireless network, comprising:

a wireless communication means for selectively communicating with other computer devices across a wireless network and selectively downloading and executing software applications;

an application means that selectively provides applications and services to the wireless communication means across the wireless network, the interaction of the wireless communication means devices with the application means causing one or more billable events, and the applications and service provided by a third party; and

a billing means for gathering the billable event data for the billable events and paying the third party for the billable events.

12. A method of billing for third party applications and services provided to the wireless devices of subscribers to a wireless network, comprising the steps of:

causing a billable event to occur through wireless device interaction with a third party computer device;

aggregating the billable events into billable event data at a billing server;

billing the appropriate subscriber for each billable event based upon the billable event data at the billing server; and

effecting payment of the third party for billable events that occurred at the computer devices of that third party.

13. The method of claim 12, wherein step of aggregating the billable events into billable data occurs at a billing server.

14. The method of claim 12, wherein the step of aggregating the billable events into billable data occurs at the third party computer device, and further comprising the step of transmitting the billable event data to the billing server from the third party computer device.

15. The method of claim 12, further comprising the steps of:  
obtaining wireless device subscriber data; and  
generating a bill at the billing server for a wireless device based upon the billable event data.

16. The method of claim 15, further comprising the step of transmitting the bill from the billing server to another computer device on the wireless network.

17. The method of claim 12, wherein the step of causing one or more billable events is causing a billable event through the download of an application from a third party application download server on the wireless network to the wireless device.

18. The method of claim 12, wherein the step of causing one or more billable events is causing a billable event through the execution of an application on the wireless device.

19. The method of claim 12, wherein the step of causing one or more billable events is causing a billable event through access of the wireless device to an application resident on a third party computer device on the wireless network.

20. The method of claim 14, further comprising the step of prompting the third party computer device to transmit billable event data to the billing server.

21. A method of billing for third party applications and services provided to the wireless devices of subscribers to a wireless network, comprising the steps of:

a billable event causation step that occurs through wireless device interaction with a third party computer device;

a billable event data aggregation step of the billable events at a billing server; and

a billing step of the appropriate subscriber for each billable event, the billing step based upon the billable event data at the billing server; and

a payment step of the third party for billable events that occurred at the computer devices of that third party.

22. A server for billing wireless device subscribers for billable events occurring from the wireless device interaction with third party applications and services resident on third party computer devices accessible through a wireless network, the wireless device able to selectively download and execute software applications, and the server further gathering billable event data for the billable events from wireless device interaction with the third party computer devices, and effecting payment of the third party for billable events that occurred at the computer devices of that third party.

23. The server of claim 22, wherein the server further generates a bill for the wireless device for at least the billable events of that wireless device.

24. The server of claim 23, wherein the billing server further generates a bill for a wireless device subscriber based upon the gathered billable event data.

25. The server of claim 24, wherein the generated bill is transmitted from the billing server to another computer device on the wireless network.

26. The server of claim 22, wherein the server receives billable event data from third party computer devices.



27. The server of claim 26, wherein the server further prompts third party computer device to transmits billable event data to the server.

28. A computer program that, when executed by a computer device on a wireless network including one or more wireless devices and third party computer devices, directs the computer device to bill for billable events that occur through wireless device interaction with third party applications and services on third party computer devices, through performing the steps of:

aggregating the billable events into billable event data;

billing the appropriate wireless device subscriber for each billable event based upon the billable event data; and

effecting payment of the third party for billable events that occurred at the computer devices of that third party

29. The program of claim 28, further directing the computer device to perform the step of receiving the billable event data from the third party computer device.

30. The program of claim 28, further directing the computer device to perform the step of receiving wireless device subscriber data.

31. The program of claim 30, further directing the computer device to perform the step of generating a bill for a wireless device based upon the billable event data.

32. The program of claim 31, further directing the computer device to perform the step of transmitting the bill to another computer device on the wireless network.

33. The program of claim 28, further directing the computer device to perform the step of prompting a third party computer device to transmit billable event data.

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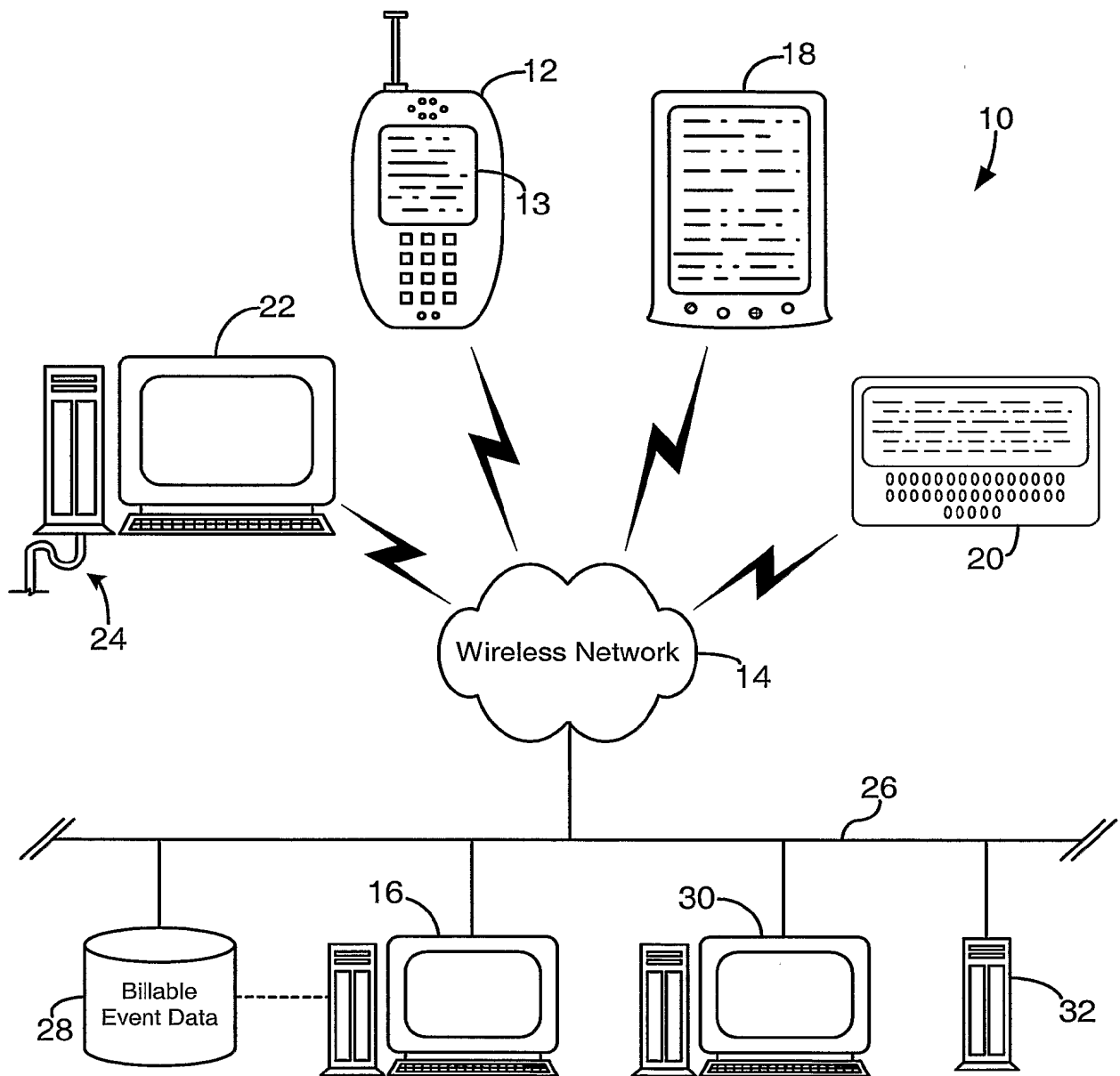


Fig. 1

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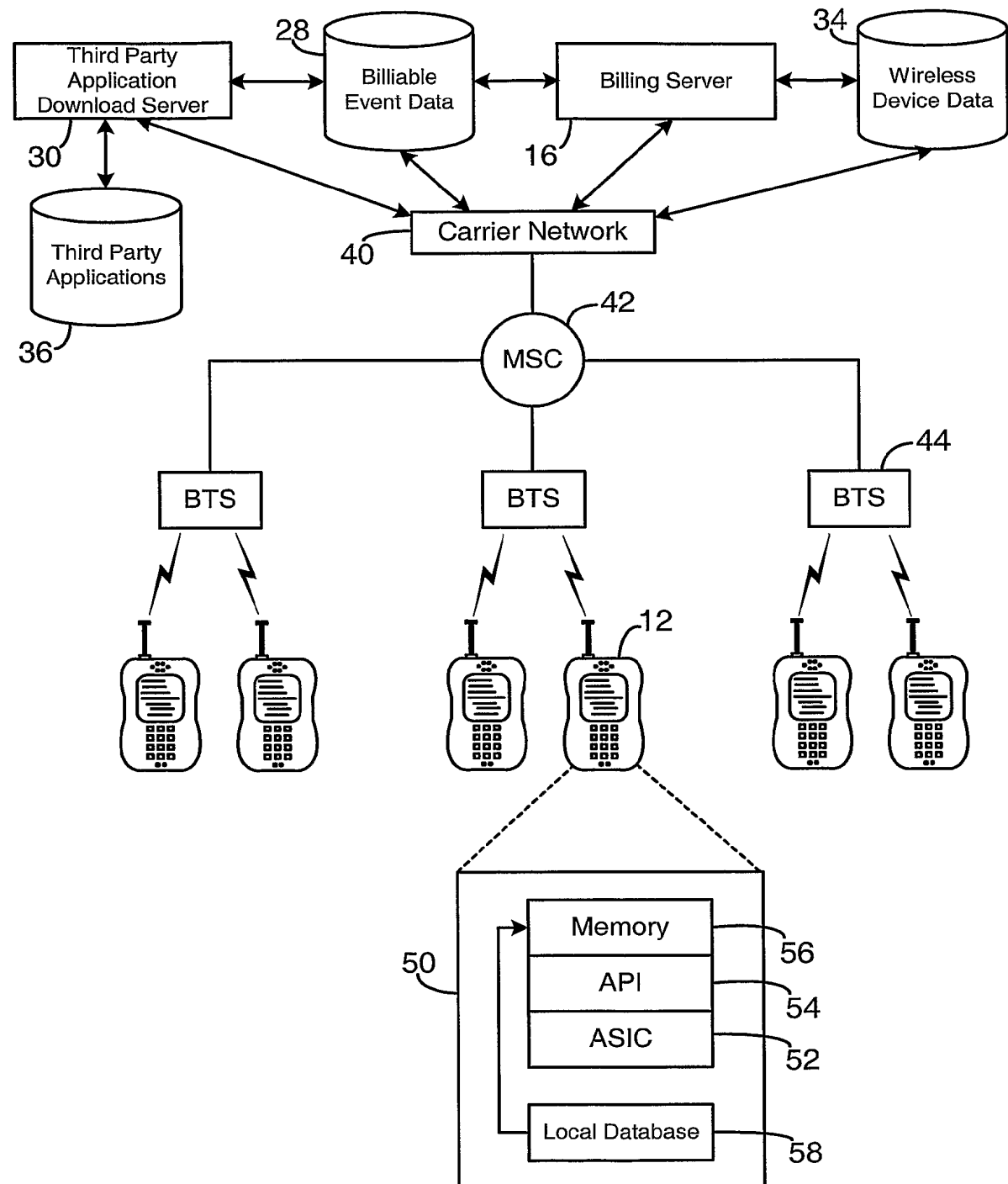


Fig. 2

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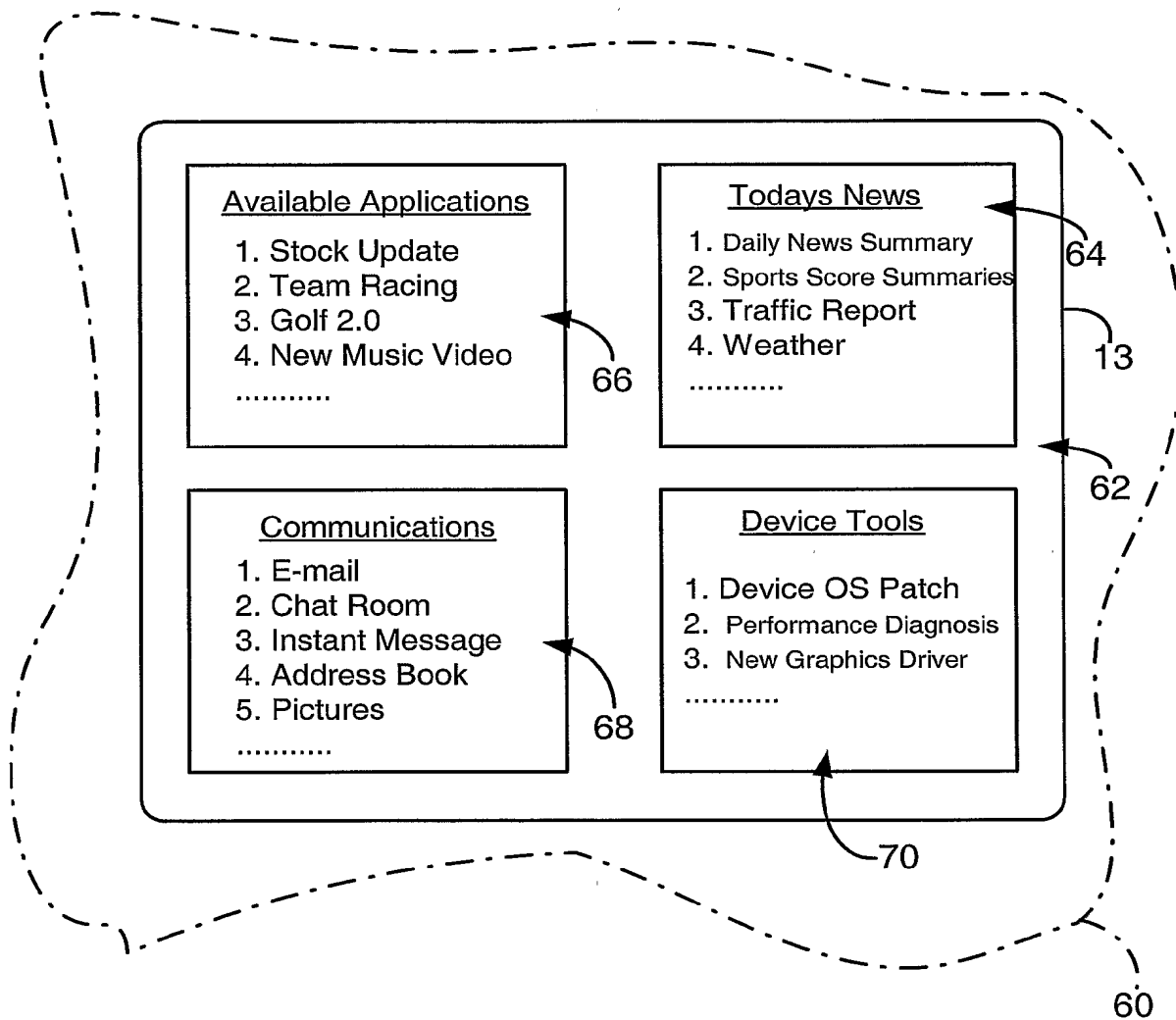


Fig. 3

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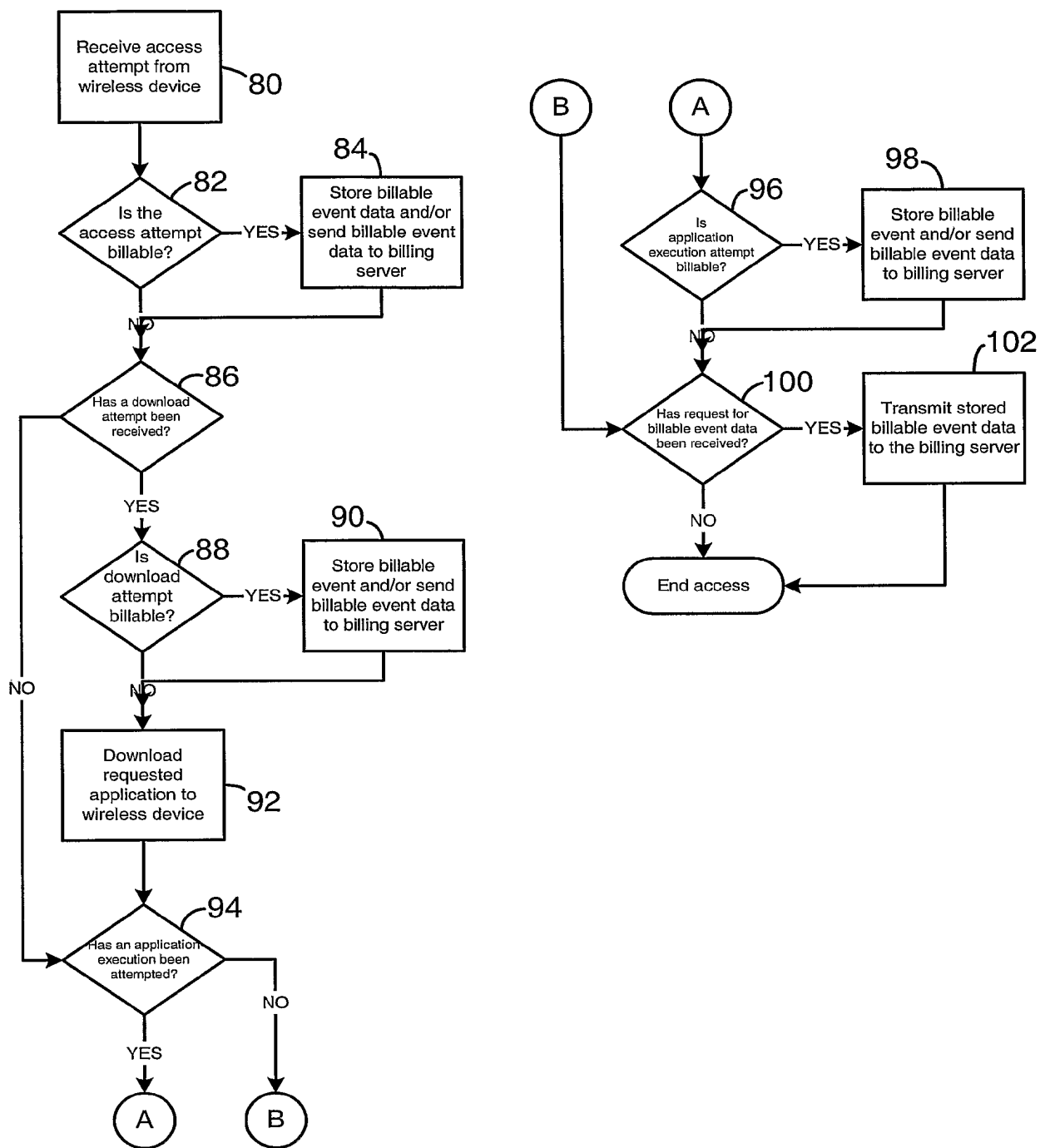


Fig. 4

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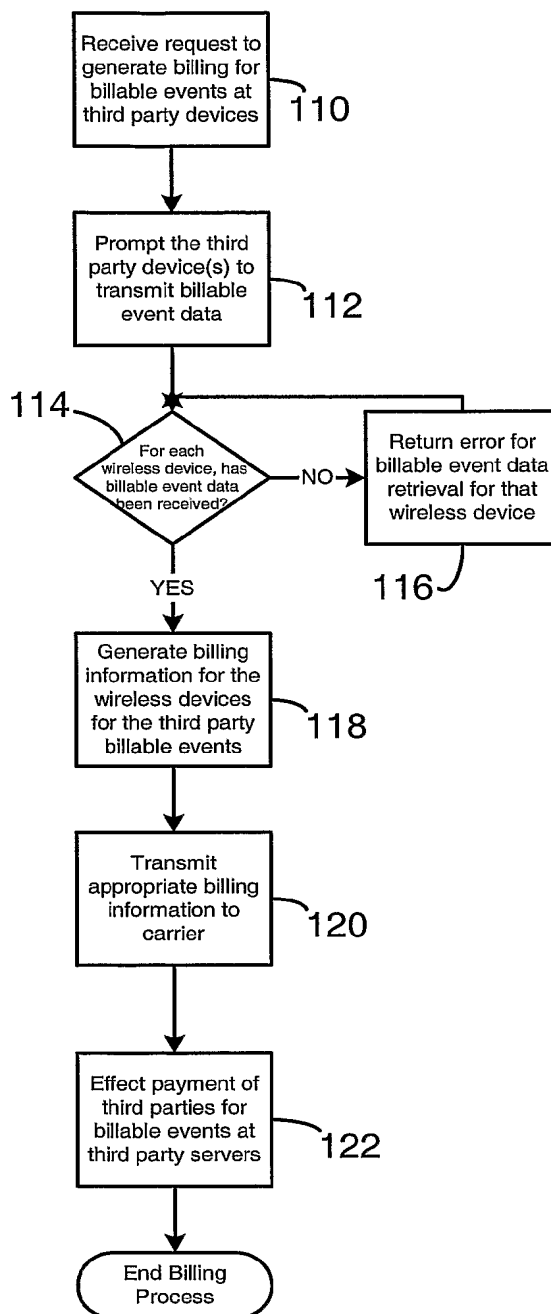


Fig. 5



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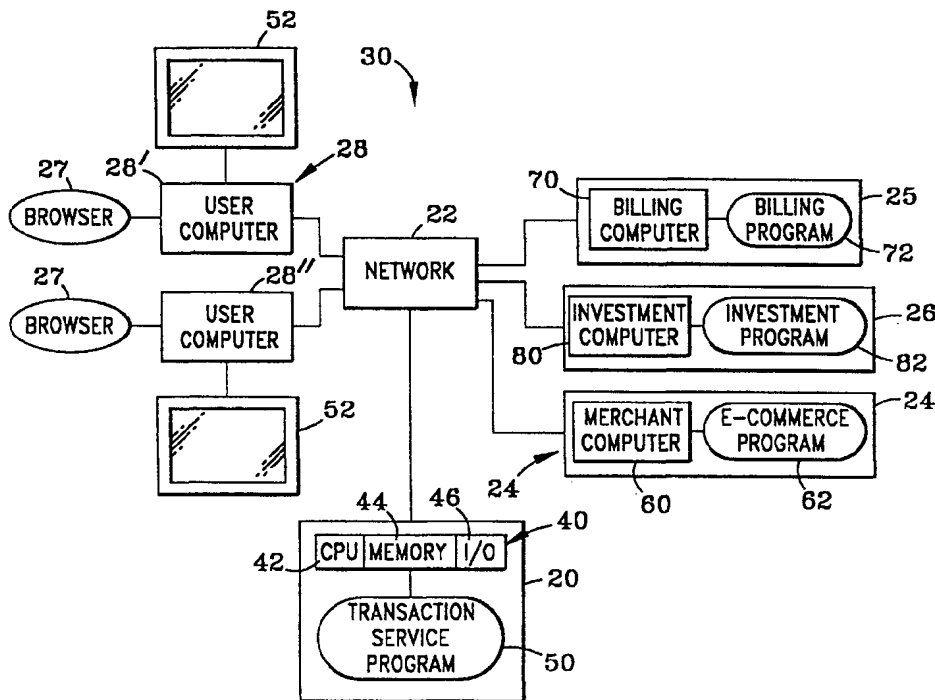
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(21) International Application Number: PCT/US99/27903 (22) International Filing Date: 24 November 1999 (24.11.99) (30) Priority Data: 60/109,833                      25 November 1998 (25.11.98)    US 09/220,666                      24 December 1998 (24.12.98)    US (71)(72) Applicant and Inventor: CHIASSON, James, P. [US/US]; 603 South Prospect Street, Burlington, VT 05401 (US). (74) Agent: MEIER, Lawrence, H.; Downs Rachlin & Martin PLLC, 199 Main Street, P.O. Box 190, Burlington, VT 05402-0190 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.          Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	

## (54) Title: COMPUTER NETWORK TRANSACTION SYSTEM

## (57) Abstract

A system (20) for conducting interactive electronic commerce, including shopping, bill payment and investment portfolio activities, across a network, such as the Internet, among multiple merchant sites (24), multiple billing sites (25) or multiple investment sites (26). The system includes tools that facilitate such activities, which tools are displayed as frames in a portion of the display of a user's computer. Remaining portions of the display of a user's computer may be filled with content from a merchant site, payment site, investment site or other site of interest. Information may be readily transferred from, for example, the web page of a merchant site to an e-catalog (124) where information concerning an item of interest is stored.

Templates (122) are provided for facilitating entry of such information. An order may be submitted to multiple merchant sites based on the contents of the e-catalog as a single operation. Similarly, bills may be paid to multiple billing sites as a single operation and investment transactions may be effected with multiple investment sites as a single operation.



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EE	Estonia						



### **Computer Network Transaction System**

This application claims the benefit of U.S. Provisional Application No. 60/109,833, filed November 25, 1998.

#### **Field of the Invention**

5 The present invention pertains to a system for conducting interactive electronic commerce, including shopping, bill payment, and investment portfolio activities, across a network, such as the Internet, among multiple merchant electronic commerce sites, multiple bill payment sites and multiple investment sites and, more particularly, to such a system that permits transactions with a plurality of such sites to be performed as a single operation.

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#### **Background of the Invention**

With the explosive commercial growth of the Internet in recent years, systems have been developed to support on-line electronic shopping, otherwise known as electronic commerce or e-commerce. An e-commerce merchant site is accessed by a potential customer using a  
15 browser such as the NAVIGATOR® browser of Netscape Communications Corporation or the EXPLORER® browser of Microsoft Corporation. With the browser, the customer enters the uniform resource locator (URL) for the e-commerce merchant site, or searches for the e-commerce merchant site using a search engine such as those identified by the marks EXCITE® of Excite Inc., YAHOO® of Yahoo! Inc., or LYCOS® of Lycos, Inc., and  
20 appropriate word queries. Once a desired e-commerce merchant site is located, e-commerce proceeds between the customer and such site.

To support e-commerce, merchant sites use e-commerce application programs of the type described in U.S. Patents Nos. 5,715,314 and 5,745,681, which operate on standard servers.  
25 Existing e-commerce application programs support e-commerce between a given customer and a given merchant site in a reasonably effective manner. Unfortunately, it tends to be inefficient and time consuming for a given customer to shop and order products from multiple e-commerce merchant sites. First, e-commerce merchant sites must be sequentially accessed by entry of the appropriate URL, by hypertext linking (if available to the desired merchant  
30 site) or by searching the World Wide Web (the web) with a suitable search engine. If the

- customer wants to comparison shop by price, size, color and the like, it is necessary for the customer to independently record product information, e.g., print web pages, or write down information on a pad of paper, and then return to the merchant site offering the selected item to place an order. Next, the customer must complete a specified set of profile information to
- 5 complete an order, e.g., name, shipping address, credit card number for each merchant, which takes time and can be frustrating. This process must then be repeated for each merchant site from which the customer wants to purchase a product. As a consequence, customers often shop at only a limited number of e-commerce merchant sites.
- 10 E-commerce has also been made somewhat easier recently by search engines and other electronic forums which contain hypertext links to multiple merchant sites in a single web page, sometimes known as electronic malls or virtual malls. Electronic malls may simplify locating merchant sites of interest, but they do not overcome the requirement to create separate customer profiles for each merchant site, place separate orders with each merchant
- 15 site, and independently record comparison shopping information within or across merchant sites. Furthermore, known electronic malls typically only facilitate the sale of hard goods, not services and items that may be downloaded in digital form, e.g., software, business articles, music and medical research.
- 20 With the advent of Internet-based electronic banking, users can now authorize payment of certain bills electronically by specifying the payment type, payment source (e.g., credit card number or bank wire transfer number) and receiving entity. Also, users can enter a standing request with a bank or other financial institution to process a debit (e.g., a car loan) to a given source (e.g., a car loan) on a monthly or other regular basis. Furthermore, financial
- 25 management software programs such as the one licensed by Intuit of Menlo Park, California, and identified by the trademark QUICKEN, permit users to pay bills to multiple entities electronically.
- Various companies such as E-Trade Securities, Inc. of Palo Alto, California
- 30 (www.etrade.com) permit users to buy and sell stocks, options and other investment vehicles on-line via the Internet. It is typically difficult for a user to record in his or her computer

information available via the Internet regarding investment opportunities at the same time such information is being displayed on the display of the user's computer. Furthermore, it tends to be difficult with known Internet investment sites for the user to buy or sell in a single operation investment vehicles from more than one investment site or bank.

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Unfortunately, it tends to be difficult for a user to submit payment for bills to multiple entities as a single transaction via the Internet with known electronic banking and commerce systems. In addition, known systems do not tend to provide users with the flexibility and functionality they desire in receiving, processing and paying bills electronically.

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### **Summary of the Invention**

One aspect of the present invention is a transaction service system in a service computer for supporting e-commerce across a distributed computer network including a user computer having a display and browser for navigating the network, and a plurality of merchant sites each having a unique URL and an e-commerce system for enabling sale or other transfer of items, which e-commerce system may be accessed via the network with the browser of the user computer. The transaction service system comprises an item template module that provides an item template, permits a user to enter in the item template information available at a merchant site regarding an item offered by the merchant site, and provides for viewing on a first portion of the display of the user's computer at least one of the item templates. In addition, the transaction service system includes an e-catalog module that permits a user to assemble an e-catalog containing information regarding items offered at more than one merchant site, and provides for viewing on a second portion of the display of the user's computer at least some of the information in the e-catalog. The first portion and the second portion are sized so that a third portion of the display of the user's computer is not occupied by the first portion and the second portion.

Another aspect of the present invention is an e-commerce system comprising a computer network, at least one user computer connectable with the network, with the at least one user computer having a display and a browser for navigating the network and a plurality of merchant computers connectable with the at least one user computer via said network. Each

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merchant computer is programmed to operate an e-commerce system for enabling e-commerce with the at least one user computer. The e-commerce system also includes a service computer connectable with the at least one user computer and the plurality of merchant computers via said network. The service computer is programmed to operate a shopping system that permits a user to order items in a single order from more than one of the merchant computers.

A further aspect of the present invention is a method of assisting a user having a user computer with a display and a browser in obtaining items offered at a plurality of merchant sites linked via a network that the user can navigate with the browser so as to access merchant sites. The method comprises, as a first step, providing a template to the user computer, via the network, in which a user may enter information regarding an item offered at a merchant site. The template is provided so that it may be viewed on the display of the user computer at the same time content from the merchant site may be viewed in the display of the user computer. The second step involves building a collection of the information regarding items offered at more than one merchant site and providing at least some of the information in the collection so that it may be viewed on the display of the user computer at the same time content from the merchant site may be viewed in the display of the user computer. As a third step, an order is created using the information in the collection for items from more than one merchant site and a request is transmitted to each merchant site for those items included in the order which each merchant site offers.

These and other aspects of the present invention are described in more detail below and are illustrated in the accompanying drawings.

#### **Brief Description of the Drawings**

FIG. 1 is a block diagram of a e-commerce computer network in accordance with the present invention;

FIG. 2 is a schematic diagram illustrating the user's computer and its display when operating using the transaction service system of the present invention, and its relationship to sources of information contained in the display;

- 5 FIG. 3 is a block diagram of the various modules in the application program of the transaction system of the present invention;

FIG. 4 is a diagram illustrating the operations performed by the transaction service system and the user computer at an initial stage of operation;

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FIGS. 5a and 5b are diagrams illustrating the operations performed by the transaction system and the user computer following selection of the shopping service link;

- 15 FIG. 6 is a diagram illustrating the operations performed by the transaction system and the user computer following selection of the select item category link;

FIG. 7 is a diagram illustrating the operations performed by the transaction system and the user computer following selection of the create item category link;

- 20 FIG. 8 is a diagram illustrating the operations performed by the transaction system, the user computer and the merchant computer following selection of the find and enter new item link;

FIG. 9 is a schematic illustration of the process by which a user populates an e-catalog based on information contained at merchant e-commerce sites;

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FIG. 10 is a diagram illustrating the operations performed by the transaction system and the user computer following selection of the find existing items link;

- 30 FIG. 11 is a diagram illustrating the operations performed by the transaction system and a user computer following selection of the edit item link;

FIG. 12 is a diagram illustrating the operations performed by the transaction system and the user computer following selection of the view multimedia object link;

FIG. 13 is a diagram illustrating the operations performed by the transaction system and the user computer following selection of the sort/exclude items link;

FIGS. 14a and 14b are diagrams of the operations performed by the transaction system, the user computer and the merchant site following selection of the select items and send order link;

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FIG. 15a is a schematic illustration of how a user can use the transaction system to complete a transaction involving multiple items from multiple merchants sites based on the contents of the e-catalog as a single transaction;

15 FIG. 15b is a schematic illustration of how a user completes multiple transactions to multiple merchants sites as multiple operations by completing the transactions outside the transaction system;

20 FIG. 16 is a diagram illustrating the operations of the transaction system and the user computer following completion of the submission of each SOEM to the outgoing queue operation in FIG. 14a;

FIGS. 17a and 17b are diagrams illustrating the operations performed by the transaction system and the user computer following selection of the bill payment service link;

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FIGS. 18a and 18b are diagrams illustrating the operations performed by the transaction system and the user computer following selection of the request investment portfolio service link;

30 FIG. 19 is a diagram illustrating the operations of the transaction system and the user computer following selection of the retrieve e-mail for user link; and

FIG. 20 is a diagram illustrating the operations of the transaction system and the user computer following selection of the edit profile/settings link.

### Detailed Description of the Invention

#### 5 A. Overview

Referring to FIG. 1, as a brief overview, the present invention is transaction service system 20 (also referred to as "system 20") for facilitating the purchase of goods and services, the acquisition of information, the payment of bills and the processing of investment portfolio transactions and other investment-related activities via e-commerce through a computer  
10 network 22, such as the Internet. While system 20 is preferably used with the Internet, network 22 may also comprise an Intranet, a local or wide area network, or a dial-in network. Network 22 may be wireless, linked by cable and optical fiber, or a combination thereof.

Goods and services are typically not offered for sale directly by transaction service system 20.  
15 Rather, system 20 is designed to aid a user in identifying, comparing and purchasing goods and services offered for sale by multiple e-commerce merchant sites 24 (only one of which is illustrated in FIG. 1). Bills may be paid using system 20 to multiple billing sites 25 (only one of which is illustrated in FIG. 1). Investment portfolio management, transactions and related activities may be conducted with multiple investment sites 26 (only one of which is illustrated  
20 in FIG. 1).

Assuming network 22 is the Internet, a user accesses transaction service system 20 using a browser 27 running on user computer 28, and then simultaneously accesses one of merchant sites 24, billing sites 25 or investment sites 26 using the browser. As described in detail  
25 below, transaction service system 20 provides a user with shopping, bill payment, and investment tools that appear together with information from a merchant site 24, billing site 25 or investment site 26 in the display of user computer 28.

The present invention provides various shopping service and related functions across the  
30 distributed computer network 30 made up of at least transaction service system 20, network 22, user computer 28, and one of merchant site 24, billing site 25 and investment

site 26. These functions are implemented within the distributed computer network as a sequence of computer implemented steps and as interconnected machine modules. The specific implementation will depend upon the computer hardware and software used, performance requirements and other factors. Some variation in implementation may also be  
5 required as operating platforms change.

Transaction service system 20 includes a computer 40 having a central processing unit (CPU) 42, typically one or more microprocessors, memory 44, typically fast access, low capacity memory such as RAM, and slower access, high capacity memory such as optical and  
10 magnetic disk drives, and an input/output (I/O) section 46, typically including various communications adapters for communicating with network 22, a keyboard (not shown), a display (not shown) and other devices. Computer 40 will typically be a conventional server computer of the type used in client-server networks. Although described as a single computer, computer 40 may comprise several linked computers, in a single or multiple  
15 locations.

Transaction service system 20 also includes application program 50 stored in memory 44 of computer 40. As described in detail below, program 50 contains computing steps for achieving the shopping service, bill payment and investment management and transaction  
20 functions of the present invention. These steps are executed as logical operations by CPU 42 in combination with memory 44 and I/O section 46.

Describing the overall distributed computer network 30 in somewhat greater detail, browser 27 of user computer 28 is a conventional browser of the type used to navigate  
25 network 22. When network 22 is the Internet, suitable browsers are available from Microsoft Corporation, Redmond, Washington, under the trademark EXPLORER and from Netscape Communications Corporation, Mountain View, California, under the trademark NAVIGATOR. User computer 28 may be one of a wide variety of computing systems such as personal computers, set-top boxes, mobile telephones, personal digital assistants, other so-  
30 called "thin client" computing systems, interactive TV and other electronic devices and venues. Each user computer 28 includes a display 52 for displaying graphics and text. While



only two user computers 28 are illustrated in FIG. 1, it is to be appreciated that distributed computer network 30 may contain millions, and some day even billions, of user computers. Individuals, businesses, governments, universities and other entities may all have user computers 28. The latter could be located in offices, cars, kiosks or be completely mobile.

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E-commerce merchant sites 24 each include a merchant computer 60, typically one or more conventional server computers, and an e-commerce application program 62 for enabling e-commerce with user computers 28 across network 22. Exemplary e-commerce application programs that are usable as program 62 are described in U.S. Patent No. 5,715,314 to

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Payne et al. and U.S. Patent No. 5,745,681 to Levine et al., which patents are incorporated herein by reference. Program 62, as used herein, is considered to include multiple

e-commerce programs and systems, such as electronic credit card verification systems, as well as related programs and systems, such as delivery service software systems. In this regard, each merchant site 24 must be able to manage customer information, execute on-line

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marketing programs like discount pricing, ensure secure and reliable order and financial transaction processes, and promptly and reliably ship, download (e.g., in the case of music or videos), or implement (e.g., in the case of a service) the transaction.

As used herein, including in the claims, "e-commerce" means any transaction that is initiated or otherwise effected by user computer 28 and involves communication via network 22 with other entities linked to the network such as merchant site 24, billing site 25 and investment portfolio site 26. E-commerce includes the purchase, sale, license and other transfer (including without charge) of goods, services, information of all types that may be provided in digital, printed or other form, and any other tangible or intangible item.

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While only one merchant site 24 is illustrated in FIG. 1, it is to be appreciated that distributed computer network 30 may include millions of merchant sites. As used herein, a merchant site 24 means (a) an e-commerce merchant site that is Internet-based and has an Internet URL that is different from that of any other merchant site and (b) an e-commerce site that is based on a computer network other than the Internet and is accessed via a unique telephone number,

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in the case of a dial-up system, a unique file name in the case of a local or wide area network, or through other means of access specific to the e-commerce site.

Billing sites 25 in computer network 30 each include a billing computer 70 and a billing  
5 program 72 that is implemented by the billing computer for generating bills, receiving and processing bill payments and performing related functions. Billing site 25 may be the billing and payment computer system of any of a wide range of entities, e.g., a utility, a credit card company, an investment firm or a merchant site 24. As used herein, a billing site 25 means  
10 (a) a billing site that is Internet-based and has an Internet URL that is different from that of any other billing site and (b) a billing site that is not Internet-based and is accessed via a unique telephone number, in the case of a dial-up system, a unique file name in the case of a local or wide area network, or through other means of access specific to the billing site.

Investment sites 26 in computer network 30 each include an investment computer 80 and an  
15 investment program 82 that is implemented by the investment computer for receiving and processing investment transactions and related functions. Investment site 26 may be operated by a brokerage house, bank or other entity involved in the purchase and sale of stocks, bonds and other financial instruments. As used herein, an investment site 26 means (a) an  
20 investment site that is Internet-based and has an Internet URL that is different from that of any other investment site and (b) an investment site that is not Internet-based and is accessed via a unique telephone number, in the case of a dial-up system, a unique file name in the case of a local or wide area network, or through other means of access specific to the investment site.

25 Turning now to FIGS. 1 and 2, as described in more detail below, a powerful feature of the transaction service system 20 is that multiple, preferably three, frames of information may be simultaneously presented in display 52 of user computer 28. The term "frame" as used herein does not necessarily mean a structure that extends around the entire periphery of display 52. Instead, "frame" means a portion of display 52. In a preferred embodiment, frame 54 appears  
30 along the right edge of display 52, frame 56 appears across the top of the display, and frame 58 occupies the remainder of the display. This permits a user to simultaneously view a

page from, for example, a merchant site 24 in frame 58, while working with information and tools provided by transaction service system 20 in frames 52 and 54. As described in more detail below, system 20 provides dynamic operation such that at times the entire display 52 may be filled with a single frame, the system may provide information and tools in frame 58 and the size and relative placement of frames 54, 56 and 58 may be changed. Furthermore, with appropriate 3-D display graphics, frames 54, 56 and 58 may overlaid one another such that content in "lower" frames may be viewed through content in "higher" frames.

When transaction service system 20 is implemented for use in an Internet environment, a user accesses the system just like any other site on the World Wide Web (hereinafter "web site"). Thus, the URL for system 20 (e.g., <http://www.digishopper.com>) is loaded via browser 27 and user computer 28 and using standard web-browsing protocols, e.g., HTML (HyperText Markup Language), HTTP (HyperText Transfer Protocol) and TCP/IP (Transmission Control Protocol/Internet Protocol) the home page for system 20 is located. In a preferred implementation for the Internet environment, user computer 28 functions as a client and system 20 functions as a server, with requests, selections and other operations merely being provided as inputs at user computer 28, with the operations actually being performed at system 20. Alternatively, system 20 may be implemented using the JAVA programming environment licensed by Sun Microsystems of Mountain View, California, or be implemented with other systems and in other environments.

The home page for system 20 contains a directory (not shown) to two separate areas of information and data content for two classes of users: members and the public. Access to the members area requires entry of username and password information, while access to the public area does not. Most of the functionality of system 20, described below in detail, is provided in the members area. However, the public area includes information such as terms and conditions of use of the members area, a privacy policy, and a new member signup application. As discussed in more detail below and as illustrated in FIG. 3, application program 50 includes a user profile module 100 that controls operation of the new member signup process through, among other things, the provision of user profile 120 which is presented graphically in display 52. Included in user profile 120 are multiple fields in which

the new member enters data such as name, billing address, shipping address, credit card number, username and password. As described below, information in user profile 120 is linked to orders placed to merchant sites 24, payment sites 25 and investment sites 26.

- 5 If desired, user profile module 100 may be designed to permit a user to allow others to access one or more e-catalogs 124 (described below) which the user has created. For example, a user may populate e-catalog 124 with birthday or wedding gift suggestions which he or she desires others to access for the purpose of obtaining gift ideas. Alternatively, a user may populate e-catalog 124 with approved office supplies or computer equipment that the users's
- 10 co-workers may purchase as needed. To achieve this functionality, system 20 permits a user to designate specified e-catalogs 124 as either generally publicly available or available upon entry of a specified password (which preferably differs from the password used to enter the members area of system 20.) Should a third party desire to access such an e-catalog 124, he or she enters system 20 through the public area and then is provided the option of connecting
- 15 to a navigation site that permits the third party to locate and review an e-catalog 124 created by the user.

All of the communication between a user computer 28 and the member area are preferably achieved using suitable encryption and data security protocols, as are communications

20 between the user computer and merchant site 24, payment site 25 and financial site 26. Exemplary encryption and data security protocols are described in U.S. Patent No. 5,557,518 to Rosen and in U.S. Patent No. 5,671,279 to Taher, which are incorporated herein by reference.

## 25 B. Transaction Service Modules

As illustrated in FIG. 3, application program 50 of transaction service system 20 includes a plurality of modules which are operatively connected so as to perform the operations necessary to achieve the functionality of the transaction service system. These modules include a user profile module 100, as discussed above, and a shopping service module 102,

30 which includes item template module 104, e-catalog module 106 and order list module 108. Application program 50 further includes bill payment module 110, investment portfolio

module 112, e-mail module 114 and user-controlled operation module 116. As described in more detail below, each of these modules of application program 50 is responsible for performing various operations including controlling the content, operation, and graphical display of an associated tool. More particularly, these tools associated with the various  
5 modules include user profile 120 associated with user profile module 110, item template 122 associated with item template module 104, e-catalog 124 associated with e-catalog module 106, order list 126 associated with order list module 108, payment form 128 associated with bill payment module 110, transaction form 130 associated with investment portfolio module 112, e-mail reader 132 associated with e-mail module 114 and user  
10 controls 134 associated with user-controlled operation module 116. Modules 102-116 and their associated tools 120-134 are described in more detail below.

While various operations are performed by specific ones of modules 102-116, as described below, it is to be appreciated the present invention is not limited to the specific  
15 implementations described. Certain operations which are described as performed by one module may be performed by another. In addition, as those skilled in the art will appreciate, significant cooperation and interaction exists between modules.

In connection with the following description of the operation of transaction service  
20 system 20, various figures, e.g., FIG. 4, contain diagrams illustrating the operation of system 20 in relation to other elements of computer network 30. In these diagrams, actions taken by browser 27 and user computer 28 occur in the column under the heading "User Actions," operations performed by system 20 occur in the column under the heading "Service Action" and operations performed by a merchant site 24 occur in the column under the  
25 heading "Merchant Actions."

Referring now to FIGS. 1, 3 and 4, to begin using transaction service system 20, at step 140 a user enters an appropriate username and password in the member page via browser 27 and user computer 28, which is transmitted via network 22 to system 20 where it is received at  
30 step 142 as a sign-on request. It is to be appreciated the actions performed at step 140 occur following some degree of communication between user computer 28 and system 20. This

communication includes an initial connection between user computer 28 and system 20 and selection of the member page directory. Communications occurring across network 22 between these various entities are identified by arrows extending between operations in the User Actions, Service Actions and Merchant Actions columns.

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When network 22 is the Internet, communication between and among system 20, user computer 28, merchant site 24, bill payment site 25 and investment site 26 is achieved using standard web-browsing protocols, e.g., HTML, JAVA, HTTP, TCP/IP. Much of this communication will be invisible to the user. However, as discussed below, in some cases e-mail notes will be provided to the user in response to certain actions taken by the user. System 20 may be implemented in non-Internet environments as well as using communication protocols appropriate to the environment.

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While not illustrated, user navigation tools such as icons, buttons and scroll arrows are provided to facilitate use of system 20. Typically these navigation tools are preferably provided in frame 54 and/or frame 56, although these tools may be provided elsewhere on display 52 of user computer 28.

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Next, at step 144 system 20 sends a member page to the user with links to various modules of application program 50, i.e., shopping service module 102, bill payment module 110, investment portfolio module 112, e-mail module 114 and user-controlled operation module 116. The member page is received by user computer 28 at step 146 and depicted on display 52. Then, at step 148, the user selects one of the links provided in the member page. If the user selects link 150 to the shopping service, then user computer 20 at step 152 sends a request for the shopping service to system 20. If the user selects link 154 to the bill payment service, then user computer 28 sends a request at step 156 for the bill payment service to system 20. If the user selects link 158 to the investment portfolio service, then user computer 28 sends a request at step 160 for the investment portfolio service to system 20. If the user selects link 162 to the e-mail reader, then user computer 28 sends a request for the e-mail reader at step 164 to system 20. If the user selects link 166 for change profile/settings, then user computer 28 sends a request for change in profile/settings at step 168 to system 20.

If the user selects link 170 to another web site, then user computer 28 at step 172 sends a request to another web site following an entry of the appropriate URL by the user or activation of a hypertext link by the user. As a final option identified at step 174, the user can select to exit system 20.

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#### C. Shopping Service Module

Turning next to FIGS. 4, 5a and 5b, following transmission of request for the shopping service at step 152 by user computer 28, transaction service system 20 receives this request at step 200 and then at step 202 sends a page to user computer 28 with links to these operations provided by shopping service module 102: select item category, create item category, find and enter item, view items in category, edit item, view multimedia object, sort/exclude items, select items and send order and request member page. At step 204, following receipt of the link page, the user selects a link to a given operation. If the user chooses select item category 206, user computer 28 sends a request at step 208 for select item category to system 20. If the user selects create item category link 210, then user computer 28 at step 212 sends a request for create item category to system 20. If the user chooses find and enter new item link 214, then user computer 28 at step 216 sends a request for find and enter new items to system 20. If the user selects find existing items link 218, then user computer 28 at step 220 sends a request for find existing items to system 20. If user selects edit item link 222, then user computer 28 at step 224 sends a request for edit item to system 20. If the user selects view multimedia object link 226, then user computer 28 at step 228 sends a request for view multimedia object to system 20. If the user selects sort/exclude items link 230, then user computer 28 at step 232 sends a request for sort/exclude items to system 20. If the user chooses select items and send order link 234, then user computer 28 at step 236 sends a request for select items and send order to system 20. Finally, the user may return to the member page with its links 150-170 by selecting link 238. Selection of this link returns the user to step 146. As an alternative, the user may select to exit system 20 at step 174.

Referring now to FIGS. 1-3, 5a and 6, before describing in more detail the result of selecting one of links 214-234, it is important to note that shopping service module 102 controls

operation of various functions that facilitate e-commerce with multiple merchant sites 24 by providing an organizational framework for products and services, i.e., items, that a user is considering acquiring. These item categories may include, without limitation, hard goods such as pants, boats, and furniture, services such as automobile repair services and home maintenance services, and digital data which may embody music, software, printed materials, videos and other information which may be represented digitally. Such other information may include, for example, book reviews, business articles, medical records and weather forecasts. While items acquired by merchant sites 24 will typically be purchased, system 20 is also adapted to permit users to acquire information by license. This is particularly true for items obtained in the form of digital data downloaded to user computer 28, e.g., software and music. Shopping service module 102 may be used to acquire items offered by a merchant site 24 at a fixed price or in an auction format. Also, items may be offered for free, e.g., a free sample of a new product or information that can be delivered digitally to user computer 28, e.g., "other information" of the type discussed above.

Shopping service module 102 is sufficiently flexible that a user need not organize items by category if he or she so chooses. In such case, all items are organized in a generic item category. In any event, each item category has an associated item template 122 (FIG. 3) containing multiple fields 250 (FIG. 2) of information pertaining to the given item category, including a multimedia object field 252 (FIG. 2). For example, if the item category is mens shirts, fields 250 in item template 122 for such item category may include neck size, sleeve length, color, type, material, manufacturer, and URL for the merchant site 24 selling the shirt, with multimedia object field 252 containing a visual depiction of the shirt or an audiovisual advertisement of the shirt. Typically, an identifier is provided adjacent a given field 250, e.g., sleeve length above the field for this information. Shopping service module 102 includes a number of predefined item templates for common item categories, and also permits the user to create his or her own custom templates as discussed below. If no item categorization is desired, then a generic template is provided with a series of unlabeled fields 250.

Templates 122 are the means by which a user enters items into his or her e-catalog 124. As described in more detail below, following entry of an item into item template 122, item



template module 104 adds the item to user's e-catalog 124 for a given item category. In this way, e-catalogs 124 directed to specific items such as coats, soccer balls, skis and automobile repair services are available for use. In one implementation of the present invention, a single e-catalog 124 is created for each user, with each item being tagged by an item category

5 identifier. When a user selects an item category, as described below, an e-catalog is generated containing the corresponding tagged items. It thus appears to the user, and for the purposes of the discussion below, that a unique e-catalog 124 for the item category selected.

E-catalog 124, which is preferably displayed in frame 56, lists some or all of the fields for a  
10 limited number, e.g., 3-5, of items in the e-catalog. As described below, the specific items depicted depend on sort and exclude operations performed by the user and hierarchical parameters of shopping service module 102. However, for example, one of the items in e-catalog 124 depicted in frame 56 may be jeans from XYZ company, in a given color, having a given size, a given product number, and from a merchant site 24 having a specified URL.  
15 Only one item in frame 56 is depicted for ease of illustration. Following this introductory description of item templates 122 and e-catalogs 124, the manner in which the templates and e-catalogs are created, modified and used is described in detail.

Referring next to FIGS. 3, 5a and 6, after user computer 28 at step 208 (FIG. 5a) sends a  
20 request for select item category to system 20, the latter invokes operation F which starts at step 270 (FIG. 6). There, system 20 generates a list of all existing item categories, which it sends to user computer 28. At step 272, user computer 28 receives and displays the list and the user selects one of the item categories listed which is then transmitted to system 20. Next, at step 274, system 20 locates the associated item template 122 and e-catalog 124 for the  
25 selected item category and sends the item template and e-catalog to the user computer. Then, at step 276, the user computer receives and displays the template, preferably in frame 54, and displays several of the e-catalog items, preferably in frame 56. At step 204, the user then selects a link to other shopping service functions.

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Turning now to FIGS. 2, 3, 5a and 7, as noted above system 20 includes a number of predefined item templates 122 for common item categories. However, to enhance the flexibility of system 20, the opportunity exists for a user to create new item categories and associated item templates 122. In this regard, if user computer 28 sends a request at step 212 (FIG. 5a) to create an item category, in response thereto system 20 invokes operation G which begins at step 280. There, system 20 generates and sends a form to user computer 28 which enables the user to create a new item category. At step 282, the user completes the form by naming the item category and identifying the various fields to be included in the template 122 for the item category. Following receipt of the completed form from user computer 28, at step 284, system 20 stores the item category and creates an item template 122 for the new item category, as indicated at step 286. Thereafter, at step 204 the user selects a link to another function.

The number of users purchasing goods and services over the Internet via e-commerce has increased dramatically in recent times. However, comparison shopping among various merchant sites 24 is difficult because merchant sites do not typically provide a way for users to segregate items of interest for future purchase. In addition, because items offered by a given merchant site 24 disappear from display 52 of user computer 28 as soon as the user links to another merchant site, it is difficult to compare similar items offered by different merchant sites. By contrast, with printed catalogs a user can comparison shop by spreading the catalogs on a table and then refer back and forth to items of interest in the catalogs. To perform similar comparison shopping with respect to items offered in e-commerce at merchant sites 24, it is generally necessary for a user to write down on a piece of paper, print out web pages or type into another computer operating nearby the pertinent information with respect to items of interest for each merchant site. Then by comparing the handwritten, printed or computer-entered information, selected items could be purchased on a merchant site-by-merchant site basis. Transaction service system 20 overcomes this inability to readily comparison shop for items offered by different merchant sites 24 by permitting a user to enter items of interest from any number of merchant sites into the user's e-catalog 124.

With reference to FIGS. 2, 3, 5b and 8, when a user desires to perform comparison shopping in preparation for the purchase of items, the user selects find and enter new item link 214 (FIG. 5b), which results in user computer 28 sending a request for find and enter new items, as identified by step 216, thereby invoking operation H by system 20. Typically this request is sent after a user has selected an item category at step 272 or has completed a form to create a new item category at step 282. If an item category has not been selected, system 20 following receipt of the request sent by user computer 28 at step 216, provides links 206 and 210 to the user to permit selection of an item category (these latter link options are not illustrated in FIG. 8).

In any event, once the user has selected an item category, at step 300 system 20 locates the item template 122 and e-catalog 124 for the selected item category, and sends the item template and e-catalog to user computer 28. At step 302, user computer 28 receives item template 122 and e-catalog 124, and displays the item template in frame 54 (FIG. 2) and several items in e-catalog 124 in frame 56. If no items have been selected to date with respect to the item category, then no items are displayed in frame 56.

At this juncture, comparison shopping can be initiated in at least three ways. If the user knows the URL for the merchant site 24 of interest, then at step 304 the user enters the URL with browser 27, which then effects the link with the selected merchant site. Prior to linking with merchant site 24, browser 27 appears in frame 58 of display 52. As an alternative, represented at step 306, the user may search for web sites with browser 27 by entering appropriate search commands such as the names of merchant sites of interest. Also with this approach, browser 27 is displayed in frame 58. As a result of this search performed at step 308, a number of "hits" are typically obtained and displayed in frame 58. The user can then hypertext links to merchant sites of interest. As yet another alternative, identified by step 310, transaction service system 20 may be designed to list a number of selected merchant sites 24, and associated hypertext links. These pre-selected merchant sites are displayed in frame 58. After reviewing the list, the user may access a merchant site of interest by hypertext linking. Content provided by merchant site 24 and displayed in frame 58 is viewable at the same time content in frames 54 and 56 may be viewed.

Regardless of whether the user following step 302 selects step 304, 306 or 310, the result is the user computer 28 is linked to a selected merchant site 24, as depicted at step 312.

Following this link, the merchant site 24 creates a home page and sends it to user

computer 28. At step 314, the user computer 28 receives the home page and displays it in

- 5 frame 58. At this stage, system 20 has set up user computer 28 so that comparison shopping within a merchant site 24 and between various merchant sites 24 can be easily and effectively accomplished. In this regard, a user may navigate within a given site 24 to find items of interest using browser 27 of user computer 28.

- 10 Referring now to FIGS. 2, 8 and 9, at step 316 the user reviews the catalog 318 (FIG. 9) of the selected merchant site 24. Once an item of interest is located, the user then enters pertinent information for the item in fields 250 and 252 of item template 122. Next, at step 320, system 20 enters information from the item template 122 into the user's e-catalog 124 for the selected item category. Such information is entered by typing, dragging and dropping,
- 15 copying, using voice recognition programs or otherwise entering the information into fields 250 and 252 of item template 122. As an example of this process by which items from catalog 318 of a given merchant site 24 are entered into the user's e-catalog 124, assume a user is interested in collecting information for item 1C in catalog 318. Pertinent information for item 1C, which is displayed in merchant catalog 318 is, for example, typed into fields 250
- 20 of item template 122. This entry of information is made easy by providing item template 122 for viewing in frame 54 so that merchant site catalog 318 may be viewed in frame 58, whereby the user may simultaneously view both the item template and the merchant site catalog.

- 25 Once the user has populated the fields 250 and/or 252 of item template 122, the information contained in these fields is automatically transferred into the user's e-catalog 124, as depicted by step 320. Thus, item 1C in merchant site catalog 318 becomes entry E1 in e-catalog 124. The user may repeat the operations in steps 316 and 320 and depicted in FIG. 9 multiple times with respect to a given merchant site catalog 318. System 20 provides a new item
- 30 template 122 for each item the user wishes to enter in e-catalog 124, as indicated by

templates 2-5 in FIG. 9. If desired, the user may print portions or all of e-catalog 124 at this or other stages in his or her use of system 20.

Following entry of all items of interest from a given merchant site 24 into e-catalog 124,

5 system 20 provides the user with the option of locating a new merchant site, as identified by step 322. The user may then select a link to another function, as identified by step 204, or may link to a new merchant site following one of steps 304, 306 or 310 discussed above. Once a new merchant site 24 is linked to user computer 28, the user reviews and selects items from the merchant site catalog 324 (FIG. 9) for that merchant site and enters them into  
10 template 122, which causes them to be entered into e-catalog 124 as described above. For example, if a user is interested in saving information concerning item 2D in merchant site catalog 324 in his or her e-catalog 124, this information is entered into item template and is then transferred into the e-catalog as item E4. Thus, a powerful feature of system 20 is that it permits a user to quickly and easily store information regarding items from multiple merchant  
15 sites 24 in the user's e-catalog 124 for a given item category, including, as noted above, a generic item category.

In some cases a user may desire to access an item previously entered in e-catalog 124. For example, before ordering an item, editing an item or comparing the item to other items, it is  
20 necessary to locate the item from among the tens, hundreds or even thousands of items in e-catalog 124. Referring to FIGS. 1-3, 5a, 8 and 10, to find an existing item in e-catalog 124, the user selects link 218 (FIG. 5a), thereby causing user computer 28 at step 220 to send a request to system 20 to find an existing item. Following receipt of this request, which invokes operation I, system 20 at step 340 sends an item category list to user

25 computer 28. An advantage of organizing items in specific item categories, as described above, is that location of a previously entered item is facilitated. Next, at step 342 the user selects an item category from those included in the list and sends the selection back to system 20. Then at step 344, system 20 locates item template 122 for the selected item category and e-catalog 124 for the selected item category, and then sends the template and e-catalog to user  
30 computer 28.

Following receipt by user computer 28 of the template 122 and e-catalog 124 provided by system 20, as indicated by step 346, the user then locates the item of interest in one of two ways. First, as indicated by step 348, the user may scroll through the e-catalog 124 until he or she locates the item of interest, as indicated by step 350. Alternatively, at step 352, the user  
5 may request a browser (not shown) from system 20, which is provided by the system so as to preferably be displayed in frame 58. Then the user may search for an item by entering in the browser in an appropriate search parameter, such as the name of the product, the name of the merchant site 24 from which the item was obtained, or the URL of the merchant site.

Following receipt of the search request, at step 354 system 20 conducts a search in the e-  
10 catalog 124 to locate all items corresponding to the search parameter(s) provided by the user. At step 355, all search results are organized and provided to user computer 28. At step 356 user computer 28 receives the search results, which are typically displayed in frame 58.

Thereafter at step 358, the user reviews the search results and locates an item of interest. The user then can perform follow-on activities with respect to the located item, e.g., order the item  
15 as described below by selecting an appropriate link at step 204, print portions or all of e-catalog 124 or edit the item, as described below.

An activity that frequently follows location of a given item at step 350 is editing of the item, either as a prerequisite to purchase of the item or for purposes of accurately listing  
20 information for a given item in template 122 to facilitate comparison shopping. Turning next to FIGS. 1-3, 5b and 11, when a user desires to edit an item in his or her e-catalog 124, the user selects link 222 (FIG. 5b) which results in user computer 28 sending a request at step 224 to system 20 for item editing. Following receipt of the edit item request, which invokes operation J, at step 370 system 20 sends the item template 122 and e-catalog 124 for  
25 an item category selected by the user prior to step 370, e.g., at step 342 (FIG. 10) or at step 272 (FIG. 6). These steps are omitted from FIG. 11 in the interest of brevity. Following receipt and display of the item template 122 and e-catalog 124 in frames 54 and 56, respectively, as indicated by step 372, the user at step 374 edits items in the e-catalog by typing in a change, dragging and dropping information from a merchant site 24 displayed in  
30 frame 58 or otherwise changing information associated with a given item. Item template module 104 (FIG. 3) and e-catalog module 106 (FIG. 3) are preferably implemented and

linked so that when a user selects a given item, by either scrolling to the item, moving a cursor in display 52 to the item or otherwise identifying the item as may be permitted by system 20, the information in fields 250 (FIG. 2) and 252 (FIG. 2) are automatically displayed in the item template 122 associated with the selected item. Changes to information in fields 250 and 252 may be made either by entering the changes in item template 122 depicted in frame 54 or by entering the changes in the items of e-catalog 124 depicted in frame 56. Thus, a change to an item in e-catalog 124 automatically causes a change in the associated template for the item and visa versa. After editing of the item at step 374 is complete, user computer 28 sends the edited information to system 20 which updates and stores the new information for the item, at step 376. Thereafter, system 20 provides the user with the option of selecting another link at step 204.

To permit effective comparison shopping, and otherwise enhance the utility of the shopping service functions of the present invention, system 20 permits a user to save a multimedia object for each item in e-catalog 124. Typically, the multimedia object will be a photograph or other graphical representation of an item of interest, in two dimensional or three-dimensional representation, including rotating three dimensional representation. However, the multimedia object may consist of audio information or audio and visual information with respect to the item. As described in more detail below, the multimedia object may be displayed in field 252 of frame 54, may be displayed so as to occupy the entire frame 58, or multiple small or "thumbnail" multimedia objects may be displayed in frame 58. In the latter case to facilitate comparison shopping, it may be desirable to simultaneously view multiple thumbnail multimedia objects for a limited set of items a user is contemplating purchasing. Known audio and video data comparison is preferably employed to reduce the file size of the multimedia object stored by system 20.

Referring to FIGS. 1-3, 5b, 6 and 12, if a user desires to view a multimedia object associated with one or more items in e-catalog 124, the user selects link 226 (FIG. 5b), thereby causing user computer 28 to send a request at step 228 to system 20 to view multimedia object. Following receipt of this request, which invokes operation K, at step 400, system 20 prepares and sends select item category link 206 and find existing item link 218 to user computer 28,

which is received at step 402 and displayed in frame 58. Then, the user selects one of these links. If the user chooses select item category link 206, system 20 processes this link as described above and illustrated in FIG. 6, including the step 274 of locating an item template 122 and e-catalog 124 for the item category selected by the user. In this regard, 5 steps 270 and 272 are omitted from FIG. 12 in the interest of brevity. Shopping service module 102, knowing that the select item category link 206 followed selection of the view multimedia object link 226, prepares thumbnails for all multimedia objects in the e-catalog for the selected item category at step 404. These thumbnails are provided to facilitate comparison and selection multimedia objects by the user. At step 406, user computer 28 10 receives the thumbnails generated by system 20 and displays them in frame 58. Should the user desire to view an enlarged version of a given thumbnail, the user selects a given multimedia object at step 408, e.g., by moving a cursor to the multimedia object and clicking or otherwise by selecting the multimedia object, which, although not illustrated, causes system 20 to provide an expanded version of the multimedia object which fills frame 58. 15 Using the "back" button (not shown) in browser 27, the user can return to the thumbnails for further comparison. Alternatively, the user may select other links at step 204.

Should the user select find existing item link 218, then system 20 processes this link as described above and illustrated in FIG. 10. These steps are not repeated here in the interest of 20 brevity. Ultimately, at step 350 the user locates an item of interest, as described above. Because such item has been located following selection of view multimedia object link 226, system 20 knows to retrieve the multimedia object for the selected item at step 410 and then provides the multimedia object to user computer 28 for display in frame 58. Thereafter, the user selects another link at step 204.

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If desired, system 20 may be implemented so that items in e-catalog 124 are continuously organized in some hierarchy by e-catalog module 106. Time and date of entry, with the most recent information last, is a preferred hierarchical scheme. However, price, URL and other schemes may be used. This organization function may operate with, subordinate to or in 30 other relationship with the sort/exclude functions described above, as desired.



System 20 permits a user to organize items in his or her e-catalog 124 so as to facilitate comparison shopping, actual purchasing of items and other activities. Referring to FIGS. 1-3, 5b and 13, if a user desires to organize items in his or her e-catalog, the user selects sort/exclude items link 230 (FIG. 5b), which results in user computer 28 sending a request for sort/exclude items, at step 232 to system 20. Following receipt of this request, which invokes operation L, at step 420 system 20 generates a list of all item categories. After user computer 28 receives this list and displays it in frame 58, at step 422, the user selects an item category. Then, at step 424, system 20 generates and sends a page with links to sort by price, sort by merchant URL, sort by date added or modified, exclude by price, exclude by merchant URL, and exclude by date range. Other sort and exclude operations may be provided as desired. Following receipt of this page at step 426 by user computer 28, the user selects one or more of these operations and provides relevant parameters, e.g., price, if the sort by price operation is selected. At step 428, system 20 performs the sort or exclude operations requested at step 426 and prepares a list of all items meeting the operation parameters and sends the result to user computer 28, where at least some results are displayed in frame 56, as indicated by step 432. All results are obtainable by scrolling or otherwise moving through the list of items. Thereafter, at step 204 the user selects another link.

As discussed above, one important drawback with existing electronics malls, e-commerce systems at merchant sites 24 and other on-line shopping services is that it is typically not possible to order items from more than one merchant site in a single transaction, i.e., by submitting a single order form. Another important drawback, as also noted above, is that only hard goods are typically available at electronic malls, not information such as business articles, industrial research reports, and items downloadable in digital form such as software, music and financial data. Shopping service module 102, and in particular order list module 108 of system 20, is designed to overcome these limitations. As described in detail below, shopping service module 102 permits a user to order any number of items present in the user's e-catalog 124, from any number of merchant sites 24, as a single operation.

Referring to FIGS. 1-3, 5b, 14a and 14b, when a user has reached a point where he or she is ready to order items in e-catalog 124, the user chooses select items and send order link 234

(FIG. 5b), which results in user computer 28 at step 236, sending a request for select items and send order to system 20. This action invokes operation M. Following receipt of a request for select items and send order, shopping service module 102 and more particularly item template module 104, generates an order list 126 at step 500 (FIG. 10) to enable the user to  
5 order items, and sends the list to user computer 28. Order list 126 includes multiple fields for information pertinent to items the user orders. For example, if the user is ordering a men's shirt, the user will enter in order list 126 information like neck size, sleeve length, color, collar type, product number, price and quantity.

10 Once a user has identified the items he or she wants to purchase through the use of find existing item link 218, sort/exclude items link 230, or in other ways, the user selects items for purchase at step 501. Order list module 108 of shopping service module 102 may provide different user input options for selecting items to be purchased. However, in one  
15 embodiment, a select item box 502 (FIG. 2) is included in each item entry for those items in e-catalog 124 displayed in frame 56. With this implementation, the user may, for example, select an item by moving the cursor of display 52 to box 502 and then clicking a left mouse button. Preferably, order list module 108 identifies which items have been selected by  
20 changing the color, entering an "X" or otherwise indicating a change in box 502. As those skilled in the art will appreciate, other techniques may be implemented for allowing a user to select items in e-catalog 124 to be purchased.

Following the user selection of items at step 501, system 20 builds an order list of those selected items at step 503. Then, at step 504, all required fields 250 for each item are evaluated to verify appropriate information exists in such fields. For example, if an item to  
25 be purchased is women's shoes and the field 250 in item template 122 for shoe size is missing or is listed as "79," order list module 108 identifies this missing information. At step 506 an order list 126 containing all selected items is generated and any missing information in the selected items are highlighted or otherwise identified to permit the user to complete such information. In connection with generating order list 126 at step 506, system 20 presumes the  
30 user intends to order a single item and so provides an item quantity of "1" in the order list. System 20 then sends this order list to user computer 28 where, at step 508, it is received and

displayed in frame 58. At step 510 the user enters greater quantities for the items included in the order list 126, if desired, and/or completes any missing fields highlighted by system 20 at step 506. This information is then sent by user computer 28 to system 20 where, at step 512, order list 126 is updated. For services, order list 126 contains information relevant to specific services of interest, e.g., date services are to be performed, and a description of key aspects of the services to be performed.

Next, the total cost of the items in order list 108 is compared with a budget earlier established by the user and a notice is generated if the cost of the items exceeds the budget, as depicted at step 514. While the steps for providing a budget comparison are not illustrated or described in detail, those skilled in the art will appreciate that such operation may be provided on an item category-by-item category basis, may be created by time period, e.g., by month, or may be an absolute number. At step 516, system 20 generates a revised order list 126 based on the input provided by the user at step 510 and adds to the order list any notices generated at step 514 with respect to budget overages. System 20 then sends this order list and any notices to user computer 28 where it is received at step 518. Next, at step 520 the user is given the option to order, edit or cancel items. In addition, the user can exit system 20 and place orders directly with merchant sites 24, all as described below.

With reference to FIGS. 1, 5a and 14a, the user elects to edit the order, for example to delete items based on a budget overage notice, such editing occurs at step 522 and then the edited order list is provided to system 20 at step 503, where a new order list is built. The operations described above follow this return to step 503. Alternatively, if the user desires to cancel the order, a cancellation notice is generated by user computer 28 and is provided to system 20 at step 524 which, at step 525, cancels the order. Thereafter, the user selects a new link at step 204. As yet another alternative, as identified at step 526, the user may place an order for the items on the order list directly with the various merchant sites 24 by telephone. Step 526 follows step 520 by a dotted line because system 20 is not involved in such ordering of items. After placing such an order, the user then can select new links at step 204. As yet a further alternative following step 520, the user may order items on the order list directly with a merchant site 24 using the e-commerce program 62 (FIG. 1) of the merchant site, as

indicated by step 528. In this regard, the user would typically hypertext link to the merchant site 24 relying on the URL field for each item in the order list to achieve such linking. The disadvantage with this approach is that a separate order needs to be placed for each merchant site 24 having items included in order list 126. Step 528 follows step 520 with a dotted line  
5 because system 20 is not directly involved when the user places an order directly with a merchant site 24. Thereafter, at step 204 a user may select another link.

Referring now to FIGS. 1-3, 14a, 14b and 15a, if the user elects to place an order for items on order list 126 directly with merchant sites 24 as provided in steps 526 and 528, the order list  
10 provides a single listing of items the user desires to purchase. This makes it easier for a user to purchase items, much like a shopping list facilitates shopping in a supermarket or conventional shopping mall. However, when the user purchases items directly from merchant sites 24, he or she will need to place separate orders 530 (FIG. 15a) with each merchant site. Thus, the user will need to place an order 530' to merchant site 24', an order 530'' to  
15 merchant site 24'' and an order 530''' to merchant site 24'''. Following receipt of these orders 530, merchant sites 24 then deliver the purchased items to the user.

To take full advantage of the functionality offered by transaction service system 20, at step 520 a user orders items on order list 126 by placing an order at step 540 for the items on  
20 order list 126, which is conveyed to system 20 by user computer 28. At step 542, system 20 generates a standard e-mail order message (SEOM) for each merchant site 24 having items included in order list 126. Next, at step 544, each SEOM is added to an outgoing queue of SEOMs. Then, at step 546, system 20 reads the first SEOM in the queue and at step 548 retrieves the data in fields 250 and 252 in item template 122 associated with the items  
25 included in the SEOM. This data comprises the information in fields 250 of template 122 necessary to complete an order. Next, at step 550, system 20 retrieves user profile and payment information from user profile module 110 and links it with the item order information obtained at step 546.

30 Next, at step 552, system 20 retrieves the e-mail address of the merchant e-mail order administrator (MEOA) for the merchant site 24 to which the SEOM prepared at

steps 546-550 is directed from information in item templates 122 associated with the items in order list 126. After creating a unique identification number at step 554 for the SEOM, system 20 completes assembly of the SEOM and sends it to the MEOA, as depicted by step 556. Typically, but not necessarily, the MEOA is at the merchant site 24 to which the SEOM is directed.

Following receipt of the SEOM by the MEOA, as indicated at step 570, the merchant site 24 retrieves and processes the SEOM at step 572. This processing includes assessing if the ordered items are in inventory or otherwise available, assembling and packing the ordered items that are available, and arranging for delivery of the items. In the case of items that are deliverable electronically, e.g., software, the assembly, packing and delivery steps involve retrieving the items from memory, assembling an e-mail message with the software as attachments, and sending the e-mail message. For items that are services, e.g., window washing, merchant site 24 arranges for delivery of the services at the time and location specified in the SEOM.

Next, at step 574, a warranty for the item may be generated and a description of extended service contract offerings may be created when appropriate for the items delivered. This description includes a form to enable the user to select one of the extended contract offerings available. In addition, a message to the user is prepared identifying which of the items in the SEOM are no longer available, are not available in the color, size, and other specifications requested, are on backorder or for other reasons cannot be provided in the form set forth in the SEOM. This message also includes confirmation of the items in the SEOM that have been shipped to the user. In the case of services, the message may specify when the services were performed. In addition, a questionnaire is generated and included in the message to enable the user to provide direction as to what he or she wants to do with respect to the items not currently available for delivery. The message together with the warranty and extended service contract offerings are then sent by merchant site 24 to transaction service system 20 where it is received at step 576. In addition for items such as software, articles, and music which are licensed rather than sold (and are typically delivered electronically), a license agreement, e.g., a "click-wrap" agreement, may also be provided as part of the message.

Then, at step 578, the message, warranty and extended service contract offerings are sent to the e-mailbox 132 (FIG. 3) of the user which is typically provided in frame 58, and are received by user computer 28 at step 580. The user then, at his or her option, completes the questionnaire, files the warranty using a "warranty file" prompt provided by system 20, completes the extended service contract form if extended service for the item is desired and, if provided, indicates acceptance of the terms of the license agreement. Following completion of these actions, user computer 28 sends the questionnaire, warranty, extended service contract form, to the extent completed by the user, and executed license agreement, if provided, to system 20.

Thereafter, at step 584 system 20 files the warranty in a warranty file for the user, and generates another SEOM containing the completed questionnaire, extended service contract form, warranty and license agreement, and provides this SEOM to merchant computer 28. Merchant site 24 receives this SEOM at step 586 and processes any new orders for items in the questionnaire, e.g., sends an item in a different color than earlier ordered, as described above. Also at step 586, merchant site 24 enters the extended service contract information contained in the form in its database and generates the actual service contract for the user. In addition, merchant site 24 may enter in its database the warranty and executed license agreement. Then at step 588 merchant site 24 generates a new message containing an order confirmation and the extended service contract requested in the form by the user. This message is then sent to system 20, where it is received at step 590, sent to the user's e-mailbox at step 592, and received at step 594 by user computer 28.

The process described above and illustrated in steps 542-594 is repeated for each merchant site 24 sourcing items in the queue developed at step 544. Thus, while from the perspective of the user a single order is submitted at step 540, behind such submission system 20 is generating and delivering a unique SEOM for each merchant site 24 providing items included in order list 126.

Referring now to FIGS. 3, 14b, 15a and 15b, the result of selecting step 540 after step 520, rather than steps 524 or 526, is illustrated in FIG. 15b. Placing an order for the items in order

list 126 at step 540 results, from the user's perspective, in a single order 530 being generated. Order 530 is then broken up and distributed in SEOMs to merchant sites 24', 24'' and 24''' in a way that is invisible to the user. As described above in reference to FIG. 15a, from the user's perspective separate orders 530', 530'' and 530''' must be submitted to obtain all items  
5 in order list 126 if steps 524 or 526 are selected.

Referring now to FIGS. 5b, 14b and 16, after system 20 submits each SEOM to the outgoing queue at step 544, it then removes the items from order list 126 at step 620. Next, at step 622, system 20 generates a list of all items ordered and sends the list to e-mailbox 132  
10 which is received by user computer 28. Following receipt of this list at step 624, user computer 28 displays the list in frame 58. Then the user can select another link at step 204.

This completes a description of the functionality and operations of shopping service module 102 of application program 50. Should the user desire to link to other service areas  
15 provided by system 20, then at step 238, following selection of link step 204, the user can request the member page with the link provided at step 146 (FIG. 4). Alternatively, the user can elect to exit system 20, at step 174.

#### D. Bill Payment Module

20 Transaction service system 20 greatly facilitates e-commerce between a user and multiple merchant sites 24 for products and services, as described above. Referring to FIGS. 1-5, 17a and 17b, bill payment module 110 (FIG. 3) of application program 50 of system 20 similarly facilitates receipt, payment, organization and other handling of bills of any type, i.e., not just bills for products purchased in e-commerce from a merchant site 24.

25 Described very generally, bill payment module 110 permits a user via user computer 28 to access his or her billing records from a billing site 25 (FIG. 1), e.g., a utility or a credit card company, and then create a bill file (not shown) in the same manner e-catalog 124 is created. In addition, bills to multiple billing sites 25 may be paid as a single operation through the use  
30 of a payment form 128 (FIG. 3), much like order list 126 may be used to order items from multiple merchant sites 24 as a single operation.

Describing bill payment module 110 in more detail, if at the user selects link step 148 in FIG. 4, the user selects bill payment service link 154, a request is sent at step 156 by user computer 28 to system 20 for the bill payment service, as described above. Following receipt of this request at step 700, system 20 sends a page to user computer 28 at step 702 having

5 links to select bill category, create bill category, find and enter bill, view bills in category, edit bill, view multimedia object, sort/exclude bills, select bill and send payment and request member page with links. User computer 28 receives and displays the page created at step 702, and then at step 704 the user selects one of the links provided at step 702. Because the functionality provided by bill payment module 110 is very similar to that of shopping

10 service module 102, a detailed description of the operation of bill payment module 110 is omitted to avoid redundancy. In this regard it is to be appreciated bill payment module 110 includes submodules analogous to item template module 104, e-catalog module 106 and order form module 108, i.e., a bill template module, a bill file module and a bill payment module, respectively, even though specific reference to such submodules is not provided below. That

15 said, bill module 110 is described in sufficient detail below to provide an understanding of the structure and functionality of the module.

If at step 704 the user chooses select bill category link 706, then at step 708 a request for the same is sent to system 20 as indicated by operation F'. As items may be organized in item

20 categories, so may bills be organized in bill categories. These bill categories may include, for example, utilities, credit cards, car payments and landscaping services. Each bill category has an associated bill template (not shown), analogous to item template 122, in which fields pertinent to a given category of bill are provided, e.g., name and URL of billing entity, new purchases, balance, billing period. Bill files (not shown), analogous to e-catalog 124, are

25 generated for each bill category. If desired, bills may be categorized in a generic bill category which provides less organizational capability, but may be preferred by some users. Payment forms 128 (FIG. 3) are provided for listing the bills to be paid, which are analogous order lists 126 for ordering items.

30 The steps implemented by bill payment module 110 in operation F' and user computer 28 are analogous to those implemented by shopping service module 102 in operation F and the user



computer, as described above and illustrated in FIG. 6, subject to the differences described above. Thus at the end of operation F', a bill template for the selected bill category is displayed in frame 54 and information for several bills in the selected bill file is displayed in frame 56.

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If at step 704 the user selects create bill category link 710, then at step 712 a request for same is sent to system 20, as indicated by operation G'. Just as shopping service module 102 permits a user to create new item categories, so does bill payment module 110 permit a user to create new bill categories. As a result, the steps implemented by system 20 in operation G' and user computer 28 are analogous to those implemented by system 20 in operation G and the user computer, as described above and illustrated in FIG. 7. Thus at the end of operation G' a template is created for the new bill category.

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If at step 704 the user selects find and enter bill link 714, then a request for same is sent to system 20, as indicated by operation H'. Bill payment module 110 permits a user to access billing sites 25 and then enter billing information into billing files via a bill template much like item information is entered into e-catalog 24 via an item template 122 from a merchant site 24. Access to such billing information typically requires entry of username and password information at billing site 25, since the billing information sought is both personal to the user and private. Billing information from a billing site 25 is displayed in frame 56 of user computer 28. In some cases it may be desirable to implement system 20 so as to permit billing sites 25 to send bills as e-mail notes to system 20, which in turn provides the bills to e-mail reader 132 for the appropriate user computer 28. Ideally, billing sites 25 will provide bills in the form of a bill template of the type provided by system 20. While specific to billing information, the steps performed by system 20 in operation H' and user computer 28 are analogous to those implemented by system 20 in operation H and the user computer, as described above and illustrated in FIGS. 8 and 9. Thus, at the end of operation H' the user has entered billing information from one or more billing sites 25 into a billing file in the selected bill category (including a generic category, if desired). This ability to collect in a single bill file billing information from multiple billing sites 25 is an important feature of bill payment module 110.

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If at step 704 the user selects the view bill in category link 718, then at step 270, a request for same is sent to system 20 as indicated by operation I'. This link permits a user to access and view a specific bill just as find existing item link 218 permits a user to access and view a specific item. However, the search parameters provided by bill payment module 110 for  
5 accessing a bill may differ somewhat from those provided by shopping service module 102 for accessing an item as the parameters are specific for bills. Also bill templates and bill files are provided in operation I' rather than item templates 122 and e-catalogs 124. In other respects the steps performed in operation I' by system 20 and user computer 28 are analogous to those performed in operation I by system 20 and the user computer, as described above and  
10 illustrated in FIG. 10.

Should the user select edit bill link 722 at step 704, then at step 724, a request for same is sent to system 20 as indicated by operation J'. As with the analogous link 222, edit bill link 722 permits a user to edit a bill, for example to indicate the amount to be paid when less than the  
15 total amount due. Following selection of a desired bill category, system 20 sends user computer 28 the bill template and bill file for the bill category selected by the user. Operation J' ends with system 20 storing the edited bill. Thus with these exceptions, the steps performed in operation J' by system 20 and user computer 28 are analogous to those performed in operation J by system 20 and the user computer, as described above and illustrated in FIG. 11.

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If at step 704 the user requests view multimedia object link 726, then at step 728 a request for same is sent to system 20 as indicated by operation K'. While multimedia objects are less frequently associated with billing information than with products and services, under certain circumstances multimedia objects may be provided, e.g., advertisements or special  
25 promotions that relate to the business of the billing site 25. Operation K' results in the multimedia object being displayed in frame 58 of user computer 28. The steps performed in operation K' by system 20 and user computer 28 are analogous to those performed in operation K by system 20 and the user computer, as described above and illustrated in FIG. 12.

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In the event the user chooses at step 704 the sort/exclude bills link 730, then at step 732 a request for same is sent to system 20 as indicated by operation L'. In connection with bill payment, budget reconciliation and other operations users may desire to identify and aggregate bills meeting certain criteria. A series of sort and exclude operations are provided when sort/exclude bill link 730 is selected, much as links to sort and exclude operations are provided at step 424 following selection of sort/exclude item link 230 in shopping service module 102, as described above and illustrated in FIG. 13. However, the sort/exclude operations provided by bill payment module 110 differ from those provided by shopping service module 102 in that they are specific to bill paying. In this regard the sort operations provided by bill payment module 110 include sort by balance amount, sort by URL of the payment site 25 and sort by date the bill was added or modified. The exclude operations include exclude by balance amount, exclude by URL of the payment site 25, and exclude by date range. Other sort and exclude operations may be provided as desired. Operation L' ends with user computer 28 receiving and displaying in frame 54 bills corresponding to the results of the sort and/or exclude operations. Except as described above, the steps performed in operation L' by system 20 and user computer 28 are very analogous to those performed in operation L by system 20 and the user computer, as described above and illustrated in FIG. 13.

Finally, if at step 704 the user chooses select bills and send payment link 734, then at step 736 a request for same is sent to system 20 as indicated by operation M'. The latter involves creating a payment form 128 which contains bills to be paid, much like order list 126 containing items to be ordered is created, as described above and illustrated in FIGS. 14a and 14b. However, one important difference exists. Frequently, items ordered from a merchant site 24 cannot be shipped at the time ordered. Steps 574-586, in part, address this fact, as described above and illustrated in FIG. 14b. No analogous situation exists with payment of bills. Therefore, operation M' differs from operation M in this regard and in that the operation pertains to generation and submission of a payment form 128 containing bills to be paid rather than generation and submission of an order list 126 containing items to be purchased. Thus, the SEOM will contain information pertinent to bill payment including the bills to be paid and account information with respect to the bank account or other payment

source to be used in paying bills. Also, like an SEOM containing items to be ordered from multiple merchant sites 24 as a single operation, the SEOM generated in operation M' allows bill payment to may made to multiple billing sites 25 as a single operation. Of course if a central bill paying entity is used, then a single SEOM containing bill payment information for all billing sites 25 may be provided to the single billing entity. If desired, bill payment module may be designed to allow a user to specify on payment form 128 when bills are to be paid. Thus, while the user may submit payment form 128 as a single operation, bill payment module 110 will only authorize release of payment funds at the date specified in payment form 128. This allows bills to be paid at one time, but avoids distribution of funds until payment is actually required. Except as described above, the steps performed in operation M' by system 20 and user computer 28 are analogous to those performed in operation M by system 20 and the user computer, as described above and illustrated in FIGS. 14a and 14b.

If the user elects not to select any links at step 704, then step 740 allows a user to request the member page with links provided at step 146. Alternatively, at step 174 the user can exit system 20.

#### E. Investment Portfolio Module

In addition to facilitating e-commerce between a user and multiple merchant sites 24 for products and services, and facilitating bill payment and related functions between a user and multiple billing sites 25, as described above, transaction service system 20 is designed to facilitate investment portfolio activities. Referring to FIGS. 1-5, 18a and 18b, described very generally, investment portfolio module 112 (FIG. 3) of application program 50 of system 20 aids a user in the selection, analysis, purchase, sale, organization and other functions with respect to the contents of an investment portfolio such as stocks, bonds, options, commodities and the like. Thus, investment portfolio module 112 permits a user via user computer 28 to access his or her investment account from an investment site 26 (FIG. 1), e.g., a stock brokerage, and then create a investment portfolio in the same manner e-catalog 124 is created. Research regarding a company in which an investment is contemplated or exists may also be conducted by contacting Internet sites or other on-line sources of information in network 22 via user computer 28, and then recording the results in a research file in the same manner

e-catalog 124 is created. In addition, although perhaps less significant than with respect to the shopping bill payment services described above, investments may be purchased from multiple investment sites 26 as a single operation through the use of a transaction form 130 (FIG. 3), much like order list 126 may be used to order items from multiple merchant sites 24 as a single operation. This is desirable where, for example, a user works with one investment site 26 for 401(K) investments, another site that has expertise with emerging growth stocks, and a third site that has expertise with commodities.

Describing investment module 112 in more detail, if at the user selects link step 148 in

FIG. 4, the user selects investment portfolio service link 158, a request is sent at step 160 by user computer 28 to system 20 for the investment portfolio service, as described above.

Following receipt of this request at step 800, system 20 sends a page to user computer 28 at step 802 having links to select investment category, create investment category, find and enter investment, view investments in category, edit investment, view multimedia object,

sort/exclude investments and select investment and effect transaction, and request member page with links. User computer 28 receives and displays the page created at step 802, and then at step 804 the user selects one of the links provided at step 802. Because the functionality provided by investment portfolio module 112 is very similar to that of shopping service module 102, a detailed description of the operation of investment portfolio

module 110 is omitted to avoid redundancy. In this regard it is to be appreciated investment portfolio module 112 includes submodules analogous to item template module 104, e-catalog module 106 and order form module 108, i.e., an investment template module, an investment account module and an investment transaction module, respectively, even though specific reference to such submodules is not provided below. That said, investment portfolio

module 112 is described in sufficient detail below to provide an understanding of the structure and functionality of the module.

If at step 804 the user chooses select investment category link 806, then at step 808 a request for the same is sent to system 20 as indicated by operation F". As items may be organized in

item categories, so may investments be organized in investment categories. These investment categories may include, for example, stocks, bonds, options and commodities. Alternatively,

all investments with one stockbroker may be maintained in one investment category, all investments with a second stockbroker may be maintained in a second category, and so on. As yet another alternative, investment categories may be created for companies being analyzed for investment purposes, with one category being used for each company. In some cases, an investment category may be created for a group of companies meeting certain criteria. In these latter cases, the term "investment" is used somewhat loosely as it pertains to investment category, insofar as certain of the categories may not relate to specific investments, but rather to research pertaining to a potential or actual investment.

Each investment category, e.g., stocks, treasury bills and junk bonds, has an associated investment template, analogous to item template 122, in which fields pertinent to a given category of investment are provided, e.g., name and URL of investment entity, name and quantity of investment, and purchase price. When tracking information about companies for investment purposes, fields in the investment template might include products, annual sales, profit margins, market share and stock price. A number of predefined investment templates for common investment types are typically provided by investment portfolio module 112. Investment accounts, analogous to e-catalogs 124, are generated for each investment category. Here too, the term "investment" as used with respect to investment accounts is not limited to merely investments such as stocks and bonds. Company research for a given company, for example, may be included in an investment account. If desired, investments may be categorized in a generic investment category which provides less organizational capability, but may be preferred by some users. Transaction forms 130 are provided for listing the investments to be purchased, which are analogous order lists 126 for ordering items.

The steps implemented by investment portfolio module 112 in operation F" and user computer 28 are analogous to those implemented by shopping service module 102 in operation F and the user computer, as described above and illustrated in FIG. 6, subject to the differences described above. Thus at the end of operation F", an investment template for the selected investment category is displayed in frame 54 and information for several investments in the selected investment account is displayed in frame 56.

If at step 804 the user selects create investment category link 810, then at step 812 a request for same is sent to system 20, as indicated by operation G". Just as shopping service module 102 permits a user to create new item categories, so does investment portfolio module 112 permit a user to create new investment categories. This flexibility in investment portfolio creation is important as very different templates are needed, for example, for stock a user owns, company research and market sector analyses. Except that the steps following selection of link 810 pertain to investments rather than items, the steps implemented by system 20 in operation G" and user computer 28 are analogous to those implemented by system 20 in operation G and the user computer, as described above and illustrated in FIG. 7. Thus at the end of operation G" a template is created for the new investment category.

In the event at step 804 the user selects find and enter new item link 814, then at step 816 a request for same is sent to system 20, as indicated by operation H". Investment portfolio module 112 permits a user to access investment sites 26 and then enter investment information into investment accounts via an investment template much like item information is entered into item template 122 from a merchant site 24. Access to such investment information typically requires entry of username and password information at investment site 26, since the investment information sought is both personal to the user and private. Alternatively, a user may select and enter information from other Internet sites. For example, when researching a company for the purpose of a possible investment, information may be selected and entered following selection of link 814 by accessing the company's web site, the web sites of market research firms having information about the company, the web sites of newspapers and magazines and other Internet sources. Investment information from an investment site 26 or other web site is displayed in frame 56 of user computer 28. While specific to investment information, the steps performed by system 20 in operation H" and user computer 28 are analogous to those implemented by system 20 in operation H and the user computer, as described above and illustrated in FIGS. 8 and 9. Thus at the end of operation H" the user has entered investment information from one or more investment sites 26, and/or from one or more other web sites, into an investment account in the selected investment category. This ability to collect in a single investment account information from multiple investment sites 26 is an important feature of investment portfolio module 112.

If at step 804 the user selects the view investments in category link 818, then at step 820 a request for same is sent to system 20 as indicated by operation I". This link permits a user to access and view a specific bill just as find existing item link 218 permits a user to access and view a specific item. However, the search parameters provided by investment portfolio module 112 for accessing a bill may differ somewhat from those provided by shopping service module 102 for accessing an item as the parameters are specific for investments. Also investment templates and investment accounts are provided in operation I" rather than item templates 122 and e-catalogs 124. In other respects the steps performed in operation I" by system 20 and user computer 28 are analogous to those performed in operation I by system 20 and the user computer, as described above and illustrated in FIG. 10.

Should the user select edit investment link 822 at step 804, then a request for same is sent to system 20 as indicated by operation J". As with the analogous link 222, this link permits a user to edit an investment, for example to indicate a change in asset allocation or share price. Or when tracking company information, edit investment link 822 permits a user to modify previously entered data such as quarterly sales, new product offerings and the like. Following selection of a desired investment category, system 20 sends user computer 28 the investment template and investment account for the investment category selected by the user. Operation J"ends with system 20 storing the edited investment. Thus, with these exceptions, the steps performed in operation J" by system 20 and user computer 28 are analogous to those performed in operation J by system 20 and the user computer, as described above and illustrated in FIG. 11.

If at step 804 the user requests view multimedia object link 826, then a request for same is sent to system 20 as indicated by operation K". While multimedia objects are less frequently associated with investments than with products and services, under certain circumstances multimedia objects may be provided, e.g., company statements, interviews, press releases and investor presentations. Operation K" results in the multimedia object being displayed in frame 58 of user computer 28. The steps performed in operation K" by system 20 and user computer 28 are very analogous to those performed in operation K by system 20 and the user computer, as described above and illustrated in FIG. 12.



In the event the user chooses at step 804 the sort/exclude investments link 830, then at step 832 a request for same is sent to system 20 as indicated by operation L". In connection with investment analysis and research users may desire to identify and aggregate investments and related information meeting certain criteria. A series of sort and exclude operations are provided when sort/exclude investment link 830 is selected, much as links to sort and exclude operations are provided at step 424 following selection of sort/exclude item link 230 in shopping service module 102, as described above and illustrated in FIG. 13. However, the sort/exclude operations provided by investment portfolio module 112 differ from those provided by shopping service module 102 in that they are specific to investments and related analysis and research. In this regard the sort operations provided by investment portfolio module 112 include sort by URL of the investment site 26 and sort by date the investment was added or modified. The exclude operations include exclude by URL of the investment site 26, and exclude by date range. Other sort and exclude operations may also be provided, as described. Operation L" ends with user computer 28 receiving and displaying in frame 54 investments or related information, e.g., company research, corresponding to the results of the sort and/or exclude operations. Except as described above, the steps performed in operation L" by system 20 and user computer 28 are very analogous to those performed in operation L by system 20 and the user computer, as described above and illustrated in FIG. 13.

Finally, if at step 804 the user chooses select investment and effect transaction link 834, then at step 836 a request for same is sent to system 20 as indicated by operation M". Creating a transaction form 130 which contains investments to be bought or sold is much like creating an order list 126 containing items to be ordered, as described above and illustrated in FIGS. 14a and 14b. Several differences do, however, exist. First, when a user submits a request to purchase or sell an investment, a unit price, e.g., dollars per share of stock, investment name and type and other information is typically required. Thus, operation M" contains steps analogous to steps 504 and 506 to uncover and identify to the user whether all required information is provided.

Second, when an investment cannot be purchased or sold at the target price provided in transaction form 130, in steps analogous to steps 572 and 574 (FIG. 14b) investment site 26

- determines whether the investment can be purchased or sold at the target price and in the target quantities. If it can, then investment site 26 sends an order confirmation indicating the date, quantity, price and other pertinent factors of the transaction, which is received by system 20 at a step analogous to step 576. If the investment cannot be purchased or sold at the target price and/or quantities, then investment site 26 sends a message advising such is the case. This message preferably includes a form requesting direction whether the transaction should be completed at another price and/or quantity target, or whether it should be canceled. Following action by the user with respect to the inquiry in the form, in a step analogous to step 582, investment site 26 processes the revised request, if possible at the new price and/or quantity targets specified, and then sends an order confirmation to the user, in steps analogous to steps 586 and 588. If the investment cannot be purchased or sold at the new price and/or quantity targets specified by the user, then another message and form requesting direction is provided by investment site 26.
- 15 Like shopping service module 102, investment portfolio module 112 generates an SEOM containing information pertinent to the purchase or sale of investments and account information with respect to the bank account or other payment source to be used in purchasing the investment. Also, like an SEOM containing items to be ordered from multiple merchant sites 24 as a single operation, the SEOM generated in operation M" allows
- 20 investments to be purchased or sold through multiple investment sites 26 as a single operation. Thus, except as described above, the steps performed in operation M" by system 20 and user computer 28 are very analogous to those performed in operation M by system 20 and the user computer, as described above and illustrated in FIGS. 14a and 14b.
- 25 If the user elects not to select any links at step 804, then at step 840 the user may request the member page with links provided at step 146. Alternatively, at step 174 the user can exit system 20.

#### F. E-Mail Module

- 30 Referring to FIGS. 1-4 and 19, if a user desires to send or retrieve e-mail, the user selects link step 148 (FIG. 4) and then the user chooses e-mail reader link 162, thereby causing user

computer 28 at step 164 to send a request for e-mail reader 132 to system 20. Following receipt of this request, at step 900 system 20 retrieves e-mail for the user, and then at step 902 provides e-mail reader 132 that permits a user to read, write, find, organize, print and/or delete e-mail. In addition, unread and stored e-mail retrieved at step 900 is included in e-mail reader 132 and sent to user computer 28. At step 904 user computer 28 receives and displays e-mail reader 132, typically in frame 58, although if desired the e-mail reader may occupy the entire display 52 of the user computer. Next, at step 906, a user performs conventional e-mail processes, i.e., reads, writes, finds, organizes, deletes and/or prints e-mail using functionality (not shown) provided on e-mail reader 132, and sends the results of this processing to user computer 28. Then, at step 908, user computer 28 performs the e-mail operations requested at step 906 and sends the results to user computer 28 along with two inquiries (steps 910 and 914) regarding further action to be taken by the user. Then, at step 910, the user is provided with the option to return to the home page for system 20. If the user elects this option, then, as noted by step 912, the user returns to the home page. If the user elects not to return to the home page, then the user is given another option at step 914 to link to other web sites. If the user chooses this option and specifies the web site to which a link is requested, then at step 916 user computer 28 through its browser 26 attempts to effect this link. Alternatively, at step 918, the user may choose to exit the e-mail service, thereby returning the user to the member page at step 146.

If desired, system 20 may be implemented so that notices appear when the user first logs on to system 20 at the member page. These notices may include, for example, an indication new mail has been received (e.g., an order confirmation), special offers, new product listings, new bills, and investment opportunities. Thus, rather than requiring a user to select e-mail reader link 162 to obtain certain information concerning e-mail, it may be provided at the time of log in.

#### G. Change Profile/Settings Module

Turning now to FIGS. 1-4 and 20, transaction service system 20 provides the user with the opportunity to edit his or her profile, for example to input a change of address, as well as to modify various settings, e.g., the relative size and placement of frames 54, 56 and 58. If at

step 148 (FIG. 4) the user selects link 166 to change profile/settings, then at step 168 user computer 28 sends such a request to system 20. Upon receipt of this request, at step 1000, system 20 sends a page with links to edit profile and edit settings. At step 1002, user computer 28 receives and displays the link page and then the user selects one of the two links provided. If the user selects edit profile link 1004, then user computer 28 sends this request to system 20 where, at step 1006, the system retrieves the user profile and creates a profile page. This page is then sent to user computer 28 and at step 1008 the user edits his or her profile and sends it to system 20 where at step 1010 it is stored. After edit profile step 1008, the user is provided with link 1012 where he or she is given the opportunity to return to the home page. If the user so desires, then at step 1014 the user returns to the home page. If the user indicates he or she does not want to return to the home page, then at link 1016 the user is given the opportunity to link to other web sites. If the user requests such a link, after providing the appropriate URL user computer 28 sends a request at step 1018 to the other web sites in an attempt to affect the link. If at step 1016 the user indicates link to other web sites is not desired, then at step 1020 an exit from the edit profile/settings services provided and the user is returned to user select link 148.

If the user at step 1002 selects edit settings link 1030, then user computer sends this request to system 20 where, at step 1032, the system retrieves existing settings and generates and sends a change settings page to user computer 28. Following receipt of this settings page and modifications of the existing settings at step 1034, user computer 28 sends the edited settings to system 20, where, at step 1036 they are stored. After the user submits the edited settings at step 1034, the user is returned to link 1012, as discussed above.

Transaction service system 20 has been described above as a vehicle for facilitating transactions between a user computer 28 and one or more of a merchant site 24, a bill payment site 25 and an investment site 26. However, it is to be appreciated that system 20 is not constrained to operate only in such environments. In fact system 20 is extremely flexible in its application and may be used in virtually any environment for virtually any purpose. In its broadest implementation, system 20 has a template module (not shown) that provides a template (not shown) viewable on display 52 of user computer 28 that may be used to enter

- almost any type of information available from any site in network 22 with which the user computer is connected. In other words, the template module need not be, for example, an item template 122 that is specific to items. A folder module is also provided that permits a user to assemble a folder containing information regarding items offered at one or more site
- 5 on network 22. Thus, e-catalog 24 is only one implementation of the more generic folder module encompassed by the present invention. Also, system 20 may be used with sites where the items offered are information, and the information may be offered in the sense that it is made available, rather than sold or licensed.
- 10 Even in this broad implementation of system 20, the template and information in the folder are provided for viewing in display 52 of user computer 28 so that they do not occupy the entire display. This permits the user to display content from a site on network 22 in portions of display 52 not occupied by the template and information from the folder.
- 15 Since certain changes may be made in the above system without departing from the scope of the invention herein involved, it is intended that all matter contained in the above description as shown in the accompanying drawings shall be interpreted in an illustrative and not in a limiting sense.

What is claimed is:

- 1 1. A transaction service system in a service computer for supporting e-commerce across  
2 a distributed computer network including a user computer having a display and  
3 browser for navigating the network, and a plurality of merchant sites each having a  
4 unique URL and an e-commerce system for enabling sale or other transfer of items,  
5 which e-commerce system may be accessed via the network with the browser of the  
6 user computer, the transaction service system comprising:
  - 7 a. an item template module that provides an item template, permits a user to  
8 enter in said item template information available at a merchant site regarding  
9 an item offered by the merchant site, and provides for viewing on a first  
10 portion of the display of the user's computer at least one of said item  
11 templates;
  - 12 b. an e-catalog module that permits a user to assemble an e-catalog containing  
13 information regarding items offered at more than one merchant site, and  
14 provides for viewing on a second portion of the display of the user's computer  
15 at least some of said information in said e-catalog; and
  - 16 c. wherein said first portion and said second portion are sized so that a third  
17 portion of the display of the user's computer is not occupied by said first  
18 portion and said second portion.
- 1 2. A system according to claim 1, further including an order module that permits a user  
2 to assemble, and submit as a single operation, an order containing items in said  
3 e-catalog from more than one merchant site.
- 1 3. A system according to claim 2, wherein said order module delivers to each merchant  
2 site offering items included in said order a communication identifying those items in  
3 said order provided by said merchant site.
- 1 4. A system according to claim 3, wherein said communication includes address  
2 information and payment information with respect to the user.

- 1 5. A system according to claim 1, wherein information entered in an item template is  
2 entered by said item template module in said e-catalog.
- 1 6. A system according to claim 1, wherein said item template module permits a user to  
2 classify items by category.
- 1 7. A system according to claim 1, wherein said e-catalog module creates e-catalogs  
2 including only items in a given category.
- 1 8. A system according to claim 1, wherein said item template includes fields in which  
2 information regarding an item may be entered.
- 1 9. A system according to claim 1, wherein said information entered in said item  
2 templates and contained in said e-catalogs is stored in the service computer.
- 1 10. A system according to claim 1, wherein said item template module permits  
2 multimedia objects that are associated with said items to be entered in said item  
3 templates.
- 1 11. A system according to claim 10, wherein said item template module provides for  
2 viewing in the display of the user's computer a plurality of thumbnail objects, each  
3 associated with one of said items.
- 1 12. A system according to claim 2, wherein said order module permits a user to establish  
2 a budget amount for items to be obtained via said plurality of merchant computers,  
3 and compares the price of items included in an order with said budget amount to  
4 determine if said price exceeds said budget amount.
- 1 13. A system according to claim 1, further including a bill payment module for facilitating  
2 the payment of bills.

- 1 14. A system according to claim 13, wherein said bill payment module comprises:
- 2 a. a bill template module that provides templates in which a user may enter
- 3 billing information available at a plurality of billing sites, and provides for
- 4 viewing on said first portion of the display of the user's computer at least one
- 5 of said bill templates; and
- 6 b. a bill file module that permits a user to assemble a bill file containing
- 7 information regarding bills from one or more of the plurality of billing sites,
- 8 and provides for viewing on said second portion of the display of the user's
- 9 computer at least some of the information contained in the bill file.
- 1 15. A system according to claim 13, wherein said bill payment module permits a user to
- 2 assemble, and submit as a single operation, a payment for bills to more than one
- 3 billing site.
- 1 16. A system according to claim 1, further including an investment portfolio module for
- 2 facilitating investment activity.
- 1 17. A system according to claim 16, wherein investment portfolio module comprises:
- 2 a. an investment portfolio module that provides investment templates in which a
- 3 user may enter investment information available at a plurality of investment
- 4 sites, and provides for viewing on said first portion of the display of the user's
- 5 computer at least one of said investment templates; and
- 6 b. an investment account module that permits a user to assemble an investment
- 7 account containing information regarding investments from one or more of the
- 8 plurality of investment sites, and provides for viewing on said second portion
- 9 of the display of the user's computer at least some of the information
- 10 contained in the investment account.



- 1 18. A system according to claim 16, wherein said investment portfolio module permits a  
2 user to assemble, and submit as a single operation, a request to buy or sell investments  
3 to more than one investment site.
- 1 19. An e-commerce system, comprising:  
2 a. a computer network;  
3 b. at least one user computer connectable with said network, said at least one user  
4 computer having a display and a browser for navigating said network;  
5 c. a plurality of merchant computers connectable with said at least one user  
6 computer via said network, each merchant computer being programmed to  
7 operate an e-commerce system for enabling e-commerce with said at least one  
8 user computer;  
9 d. a service computer connectable with said at least one user computer and said  
10 plurality of merchant computers via said network; and  
11 e. said service computer being programmed to operate a shopping system that  
12 permits a user to order items in a single order from more than one of said  
13 merchant computers.
- 1 20. A system according to claim 19, wherein said shopping system permits a user to store  
2 information regarding items offered by one or more of said plurality of merchant  
3 computers, and provides at least some of said information so that it may be displayed  
4 in only one portion of said display of said user computer so that the user may display  
5 content from one or more of said plurality of said merchant computers in other than  
6 said one portion of said display.
- 1 21. A system according to claim 19, wherein said shopping system permits a user to store  
2 information by category.
- 1 22. A method of assisting a user having a user computer with a display and a browser in  
2 obtaining items offered at a plurality of merchant sites linked via a network that the

1 user can navigate with the browser so as to access merchant sites, the method  
2 comprising the steps of:

- 3 a. providing a template to the user computer, via the network, in which a user  
4 may enter information regarding an item offered at a merchant site, wherein  
5 said template is provided so that it may be viewed on the display of the user  
6 computer at the same time content from the merchant site may be viewed in  
7 the display of the user computer;
- 8 b. building a collection of said information regarding items offered at more than  
9 one merchant site and providing at least some of said information in said  
10 collection so that it may be viewed on the display of the user computer at the  
11 same time content from the merchant site may be viewed in the display of the  
12 user computer; and
- 13 c. creating an order using said information in said collection for items from more  
14 than one merchant site and transmitting a request to each merchant site for  
15 those items included in said order which said each merchant site offers.

1 23. A method according to claim 22, wherein said step a and said step b are performed so  
2 that a third portion of said display of said user computer may contain content from a  
3 merchant site at the same time at least one of (a) said template and (b) said at least  
4 some of said information is displayed in the display of the user computer.

1 24. A method according to claim 22, further including the step of searching for said  
2 information for items of interest to the user based on input provided by the user.

1 25. A method of obtaining items offered at a plurality of merchant sites linked via a  
2 network that the user can navigate with the browser of a user computer so as to access  
3 merchant sites, the method comprising the steps of:

- 4 a. linking with a merchant site so as to display content from the merchant site in  
5 the display of the user computer;

- 6       b.       entering information regarding items available at the merchant site in an item  
7       template viewable in the display of the user computer at the same time said  
8       content is displayed; and  
9       c.       manipulating information in an e-catalog viewable in the display of the user  
10      computer at the same time said content is displayed.
- 1   26.   An e-commerce system intended to assist a user having a user computer with a display  
2       and a browser in obtaining items offered at a plurality of merchant sites linked via a  
3       network that the user can navigate with the browser to as to access merchant sites, the  
4       system comprising:  
5       a.       first means for providing a template to the user computer, via the network, in  
6       which a user may enter information regarding an item offered at a merchant  
7       site, wherein said template is provided so that it may be viewed on the display  
8       of the user computer so that the user may simultaneously view content from  
9       the merchant site on the display of the user computer;  
10      b.       second means for building a collection of said information regarding items  
11      offered at more than one merchant site and providing at least some of said  
12      information in said collection so that the user may simultaneously view  
13      content from the merchant site on the display of the user computer; and  
14      c.       third means for creating an order using said information in said collection for  
15      items from more than one merchant site and transmitting a request to each  
16      merchant site for those items included in said order which said each merchant  
17      site offers.
- 1   27.   A system according to claim 26, wherein said first means provides said template for  
2       display, and said second means provides said at least some information for display, so  
3       that a third portion of said display of said user computer may contain content from a  
4       merchant site at the same time at least one of (a) said template and (b) said at least  
5       some of said information is displayed in the display of the user computer.

1 28. A computer-readable storage medium containing a computer program executable by a  
2 service computer linked to a computer network and designed to assist a user having a  
3 user computer with a display and a browser in obtaining items offered at a plurality of  
4 merchant sites linked via the computer network that the user can navigate with the  
5 browser to as to access merchant sites, the computer program comprising the steps of:

- 6 a. providing a template to the user computer, via the network, in which a user  
7 may enter information regarding an item offered at a merchant site, wherein  
8 said template is provided so that it may be viewed on the display of the user  
9 computer at the same time content from the merchant site may be viewed in  
10 the display of the user computer;
- 11 b. building a collection of said information regarding items offered at more than  
12 one merchant site and providing at least some of said information in said  
13 collection so that it may be viewed on the display of the user computer at the  
14 same time content from the merchant site may be viewed on the display of the  
15 user computer; and
- 16 c. creating an order using said information in said collection for items from more  
17 than one merchant site and transmitting a request to each merchant site for  
18 those items included in said order which said each merchant site offers.

1 29. A computer-readable storage medium according to claim 28, wherein said step a and  
2 said step b are performed so that a third portion of said display of said user computer  
3 may contain content from a merchant site at the same time at least one of (a) said  
4 template and (b) said at least some of said information is provided in the display of the  
5 user computer.

1 30. A transaction service system in a service computer for supporting activities across a  
2 distributed computer network including a user computer having a display and browser  
3 for navigating the network, and a plurality of sites each having a unique URL and  
4 information pertaining to one or more subjects, which information can be accessed via  
5 the browser of the user computer, the transaction service system comprising:

- 6           a.       a template module that provides templates in which a user may enter  
7                   information available at the plurality of sites, and provides for viewing on a  
8                   first portion of the display of the user's computer at least one of said  
9                   templates;
- 10          b.       a folder module that permits a user to assemble a folder containing  
11                   information from one or more of the plurality of sites, and provides for  
12                   viewing on a second portion of the display of the user's computer at least some  
13                   of the information contained in said folder; and
- 14          c.       wherein said first portion and said second portion are sized so that a third  
15                   portion of the display of the user's computer is not occupied by said first  
16                   portion and said second portion.
- 1   31.    A system according to claim 30, further including an order module that permits a user  
2           to assemble, and submit as a single operation, a request for items in said folder from  
3           more than one site.
- 1   32.    A system according to claim 31, wherein said order module delivers to each site  
2           offering items included in said request a communication identifying those items in  
3           said request provided by said merchant site.
- 1   33.    A system according to claim 32, wherein said communication includes user profile  
2           and payment information.
- 1   34.    A system according to claim 30, wherein information entered in a template is entered  
2           by said template module in said folder.
- 1   35.    A system according to claim 30, wherein said template module permits a user to  
2           classify items by category.
- 1   36.    A system according to claim 30, wherein item template module creates folders  
2           including only items in a given category.

- 1 37. A system according to claim 30, wherein said template includes fields in which  
2 information regarding an item may be entered.
- 1 38. A system according to claim 30, wherein said information entered in said templates  
2 and said folders is stored in the service computer.
- 1 39. A system according to claim 30, wherein said system stores said items entered in said  
2 templates in said service computer.
- 1 40. A system according to claim 30, wherein said information entered in said template  
2 may include multimedia objects.
- 1 41. A system according to claim 30, wherein said system permits a user to establish a  
2 budget amount for items to be obtained via the plurality of sites, and compares the  
3 price of items included in a request with said budget amount to determine if said price  
4 exceeds said budget amount.
- 1 42. A system according to claim 30, wherein (a) said template module provides said at  
2 least one of said templates for viewing in said first portion and (b) said folder module  
3 provides said at least some of the information contained in said folder for viewing in  
4 said second portion so that content from at least one of said plurality of sites may be  
5 simultaneously viewed in said third portion of the display of the user's computer.
- 1 43. A system according to claim 30, wherein said template is an item template and said  
2 folder is an e-catalog.
- 1 44. A system according to claim 30, wherein said template is a bill form and said folder is  
2 a bill file.

- 1 45. A system according to claim 30, wherein said template is a transaction form and said  
2 folder is an investment account.
- 1 46. A billing service system in a service computer for supporting billing activities across a  
2 distributed computer network including a user computer having a display and browser  
3 for navigating the network, and a plurality of billing sites each having a unique URL  
4 and a billing system for enabling bill payment and other activities, which billing  
5 system may be accessed via the network with the browser of the user computer, the  
6 billing service system comprising:
- 7 a. a bill template module that provides a bill template, permits a user to enter in  
8 said bill template information available at a billing site regarding a bill at the  
9 billing site, and provides for viewing on a first portion of the display of the  
10 user's computer at least one of said bill templates;
  - 11 b. a bill file module that permits a user to assemble a bill file containing  
12 information regarding bills at the billing site, and provides for viewing on a  
13 second portion of the display of the user's computer at least some of said  
14 information in said bill file; and
  - 15 c. wherein said first portion and said second portion are sized so that a third  
16 portion of the display of the user's computer is not occupied by said first  
17 portion and said second portion.
- 1 47. A system according to claim 46, further comprising a bill payment module that  
2 permits a user to assemble, and submit as a single operation, a payment for bills to  
3 more than one billing site.
- 1 48. A system according to claim 47, wherein said bill payment module permits a user to  
2 specify when payment for each bill is to made to each billing site.
- 1 49. A system according to claim 46, wherein said bill template module permits a user to  
2 classify bills by category.

- 1 50. An investment portfolio system in a service computer for supporting investment  
2 activities across a distributed computer network including a user computer having a  
3 display and browser for navigating the network, and a plurality of investment sites  
4 each having a unique URL and an investment system for enabling investment  
5 activities, which investment system may be accessed via the network with the browser  
6 of the user computer, the investment portfolio system comprising:
- 7 a. an investment template module that provides investment templates in which a  
8 user may enter investment information available at a plurality of investment  
9 sites, and provides for viewing on a first portion of the display of the user's  
10 computer at least one of said investment templates;
  - 11 b. an investment account module that permits a user to assemble an investment  
12 account containing information regarding investments from one or more of the  
13 plurality of investment sites, and provides for viewing on a second portion of  
14 the display of the user's computer at least some of the information contained  
15 in the investment account; and
  - 16 c. wherein said first portion and said second portion are sized so that a third  
17 portion of the display of the user's computer is not occupied by said first  
18 portion and said second portion.
- 1 51. A system according to claim 50, further comprising an investment transaction module  
2 that permits a user to assemble, and submit as a single operation, a request to  
3 complete investment transactions to more than one investment site.
- 1 52. A system according to claim 51, further wherein said investment transaction module  
2 permits a user to specify a target sale or purchase price for an investment.
- 1 53. A system according to claim 50, wherein said investment template module permits a  
2 user to classify investments by category.
- 1 54. A system for supporting the collection, organization, storage and/or retrieval of  
2 information, the system being connectable to a distributed computer network



1 including a user computer having a display and browser for navigating the network,  
2 and a plurality of sites each having a unique address and information pertaining to one  
3 or more subjects, which information can be accessed via the browser of the user  
4 computer, the system comprising:

- 5 a. a template module that provides templates via the network upon request by the  
6 user computer so as to be viewable on the display of the user computer, said  
7 templates having a plurality of fields into which a user may enter alphanumeric  
8 and multimedia information available at the plurality of sites, each of said  
9 plurality of fields designed to receive a specific category of information; and  
10 b. an information module for storing information entered via said plurality of  
11 fields into said templates, which information is provided from the user  
12 computer via the network to said information module and is stored by said  
13 information module in an organizational format corresponding to said specific  
14 categories of information.

- 1 55. A system according to claim 54, further including an interface module for permitting a  
2 user computer to initiate storage of, search for and retrieval of information stored by  
3 said information module, said interface module being provided via the network to the  
4 user computer so as to be viewable on the display of the user computer.

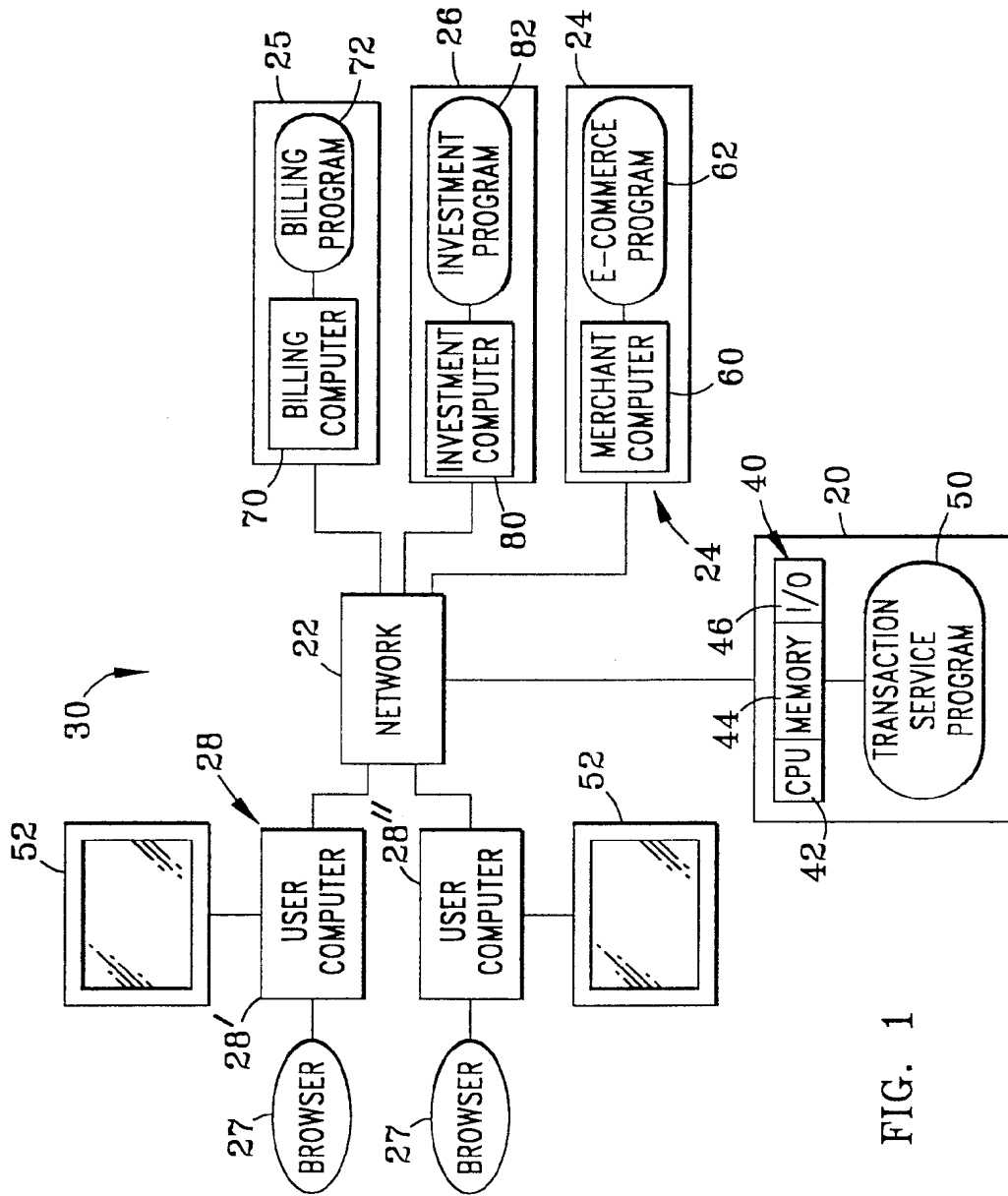


FIG. 1

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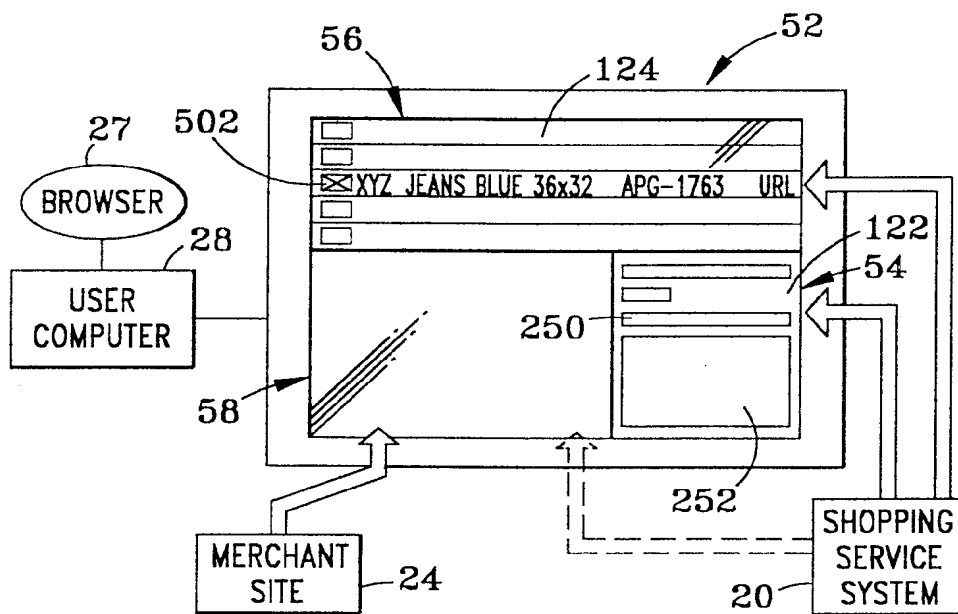


FIG. 2

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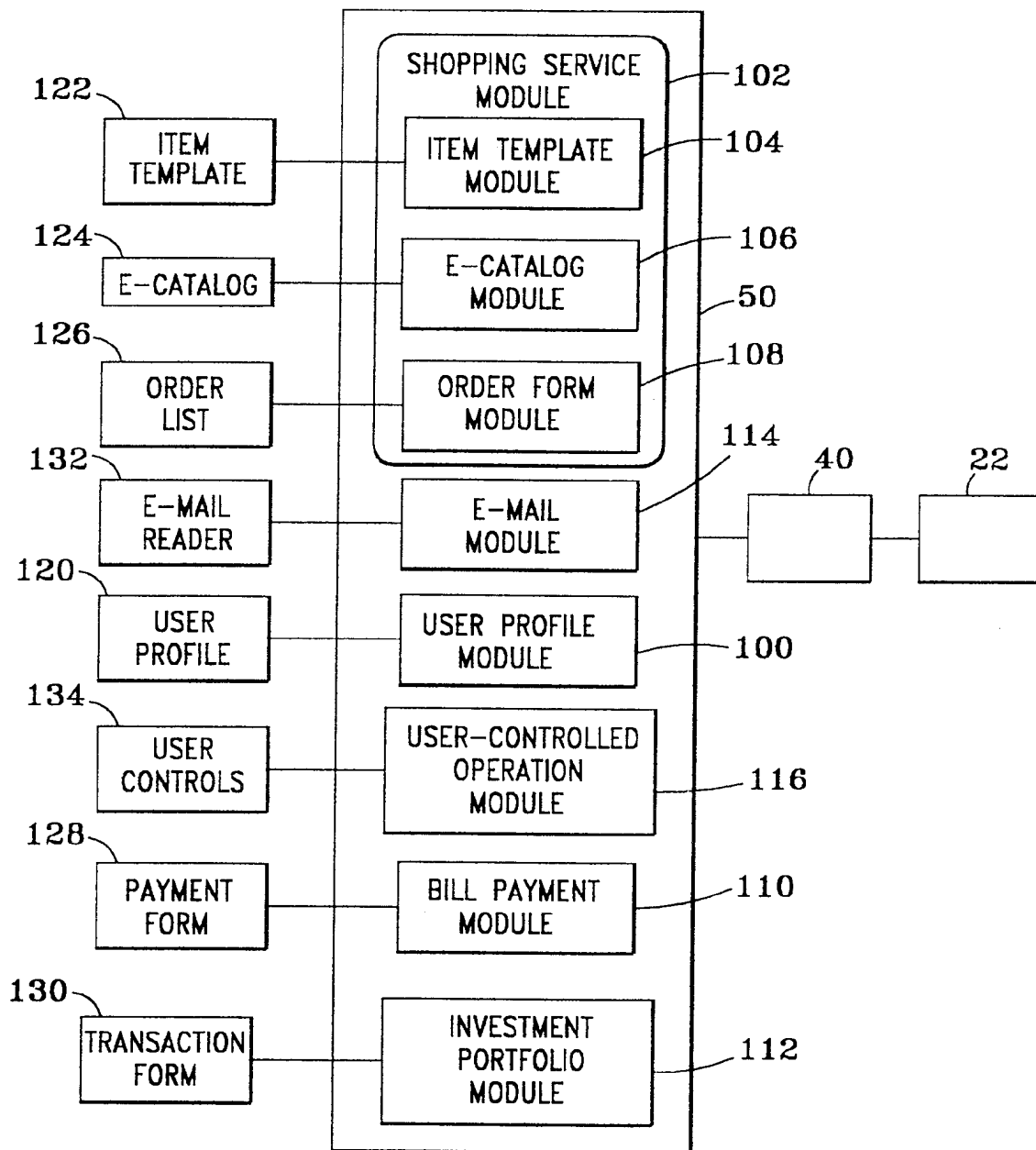


FIG. 3

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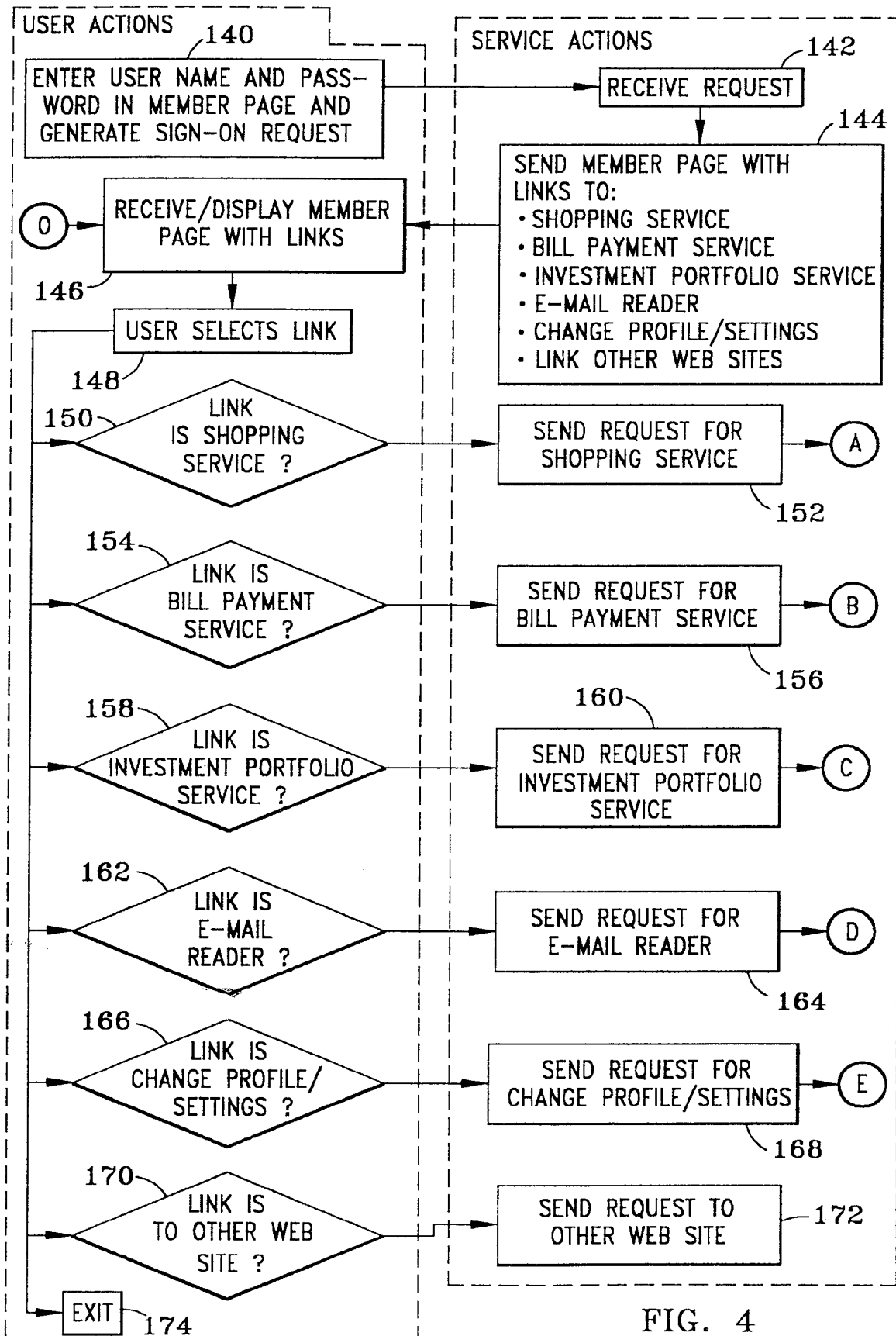
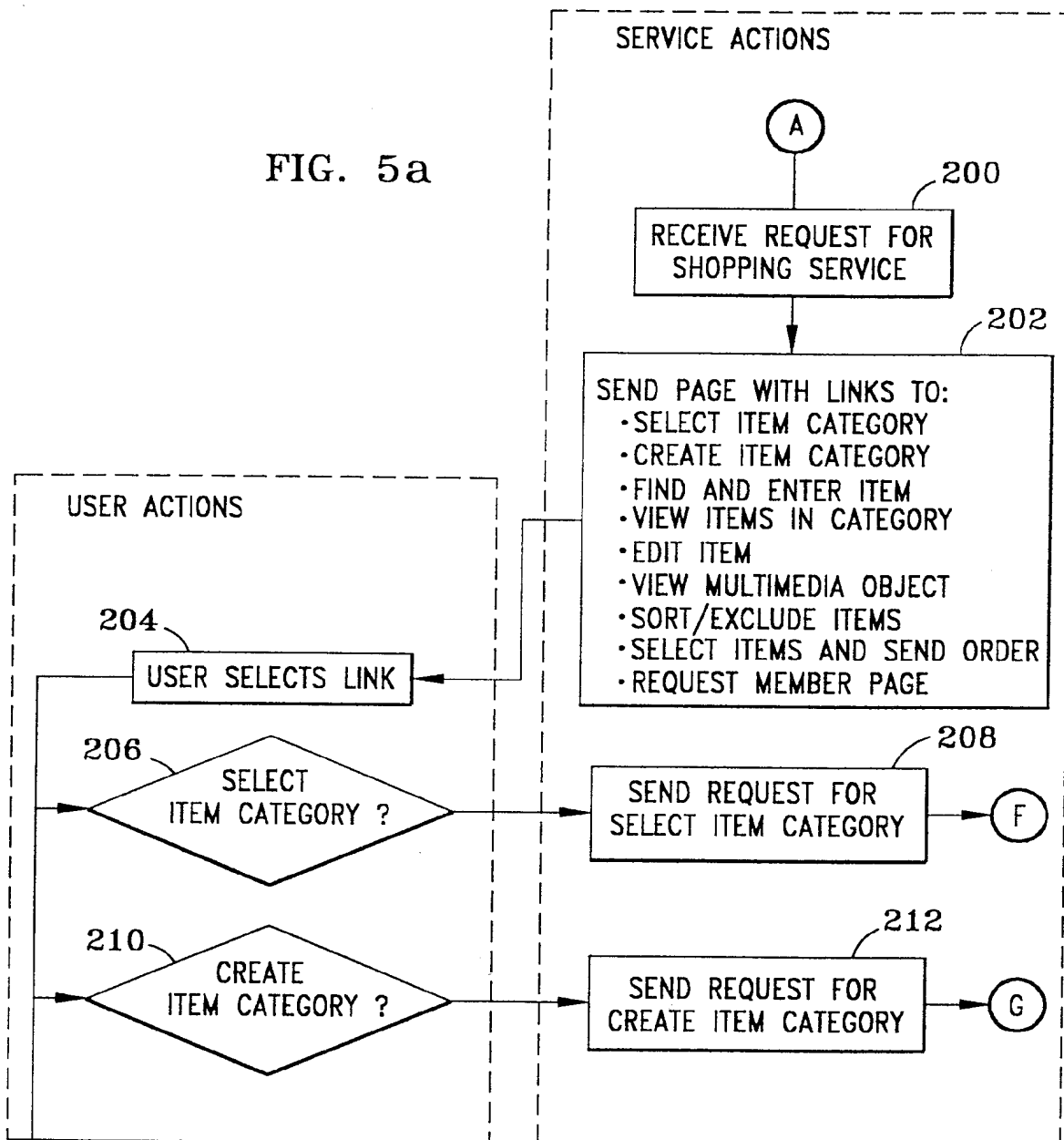


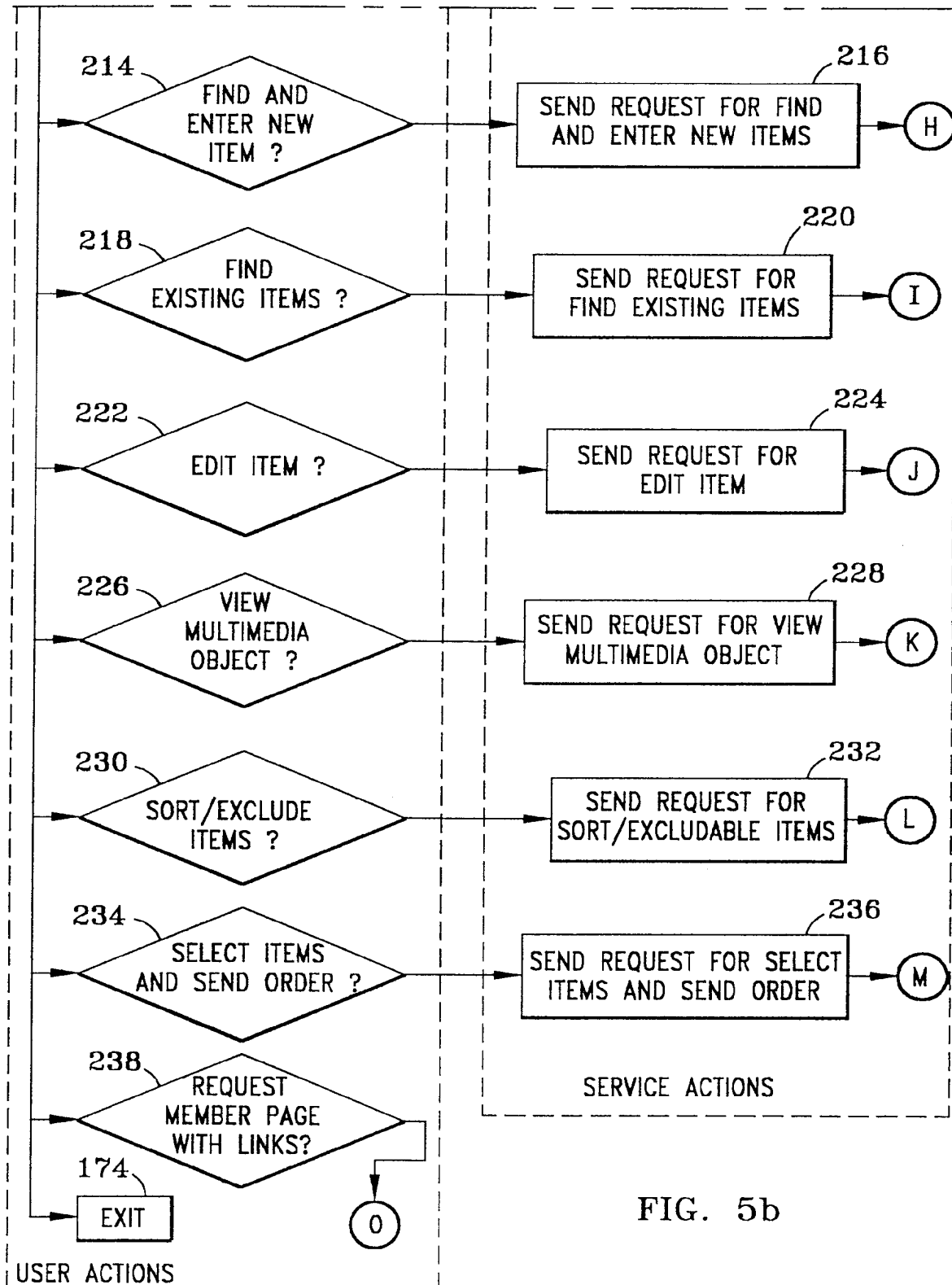
FIG. 4

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FIG. 5a



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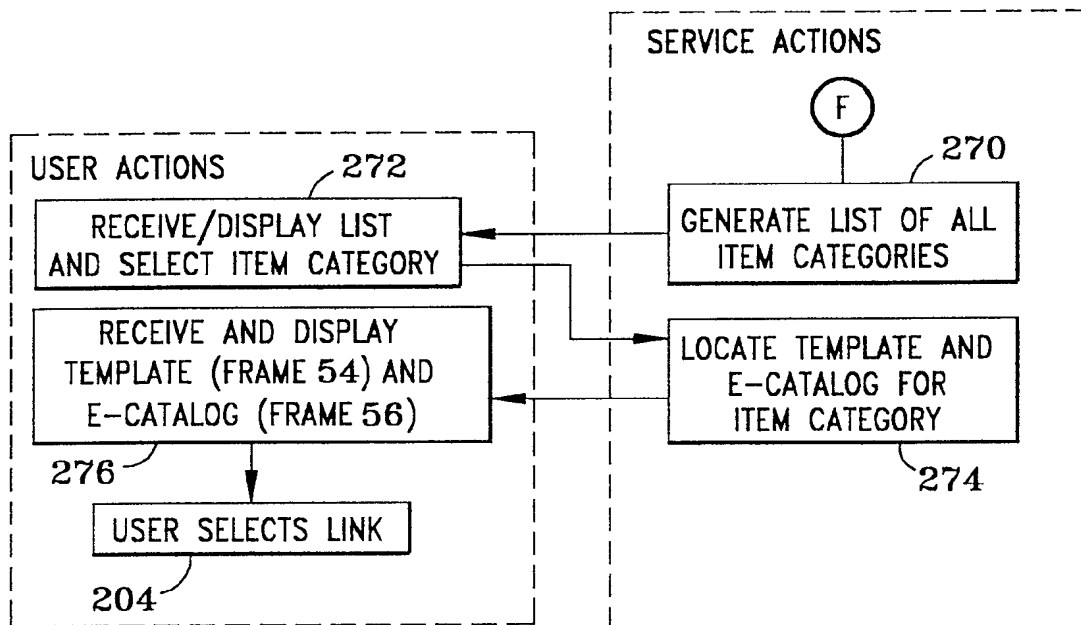


FIG. 6

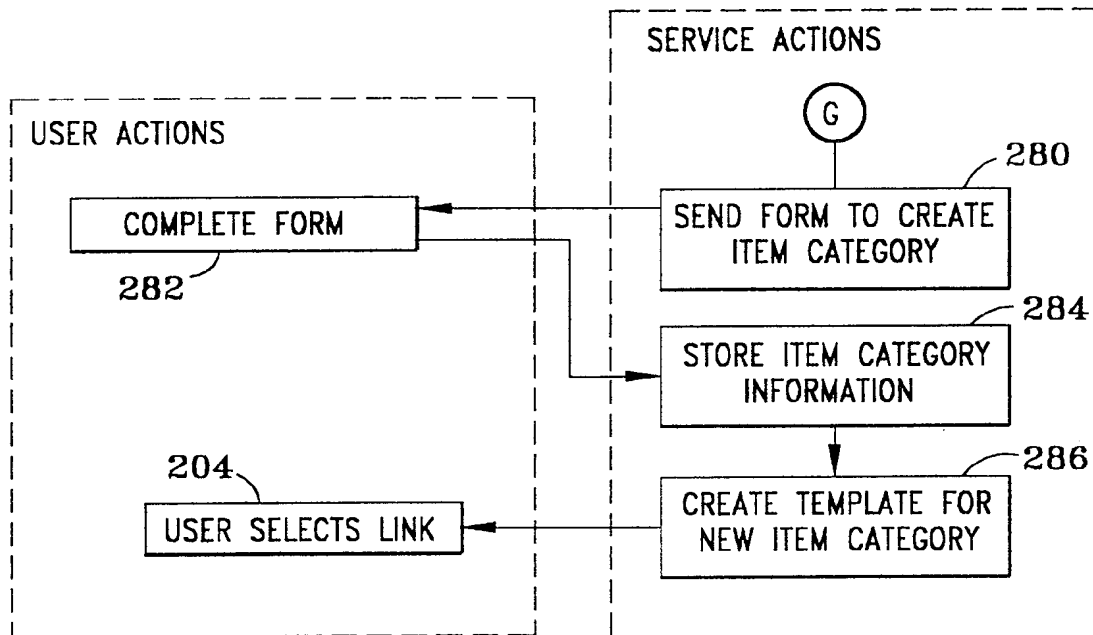
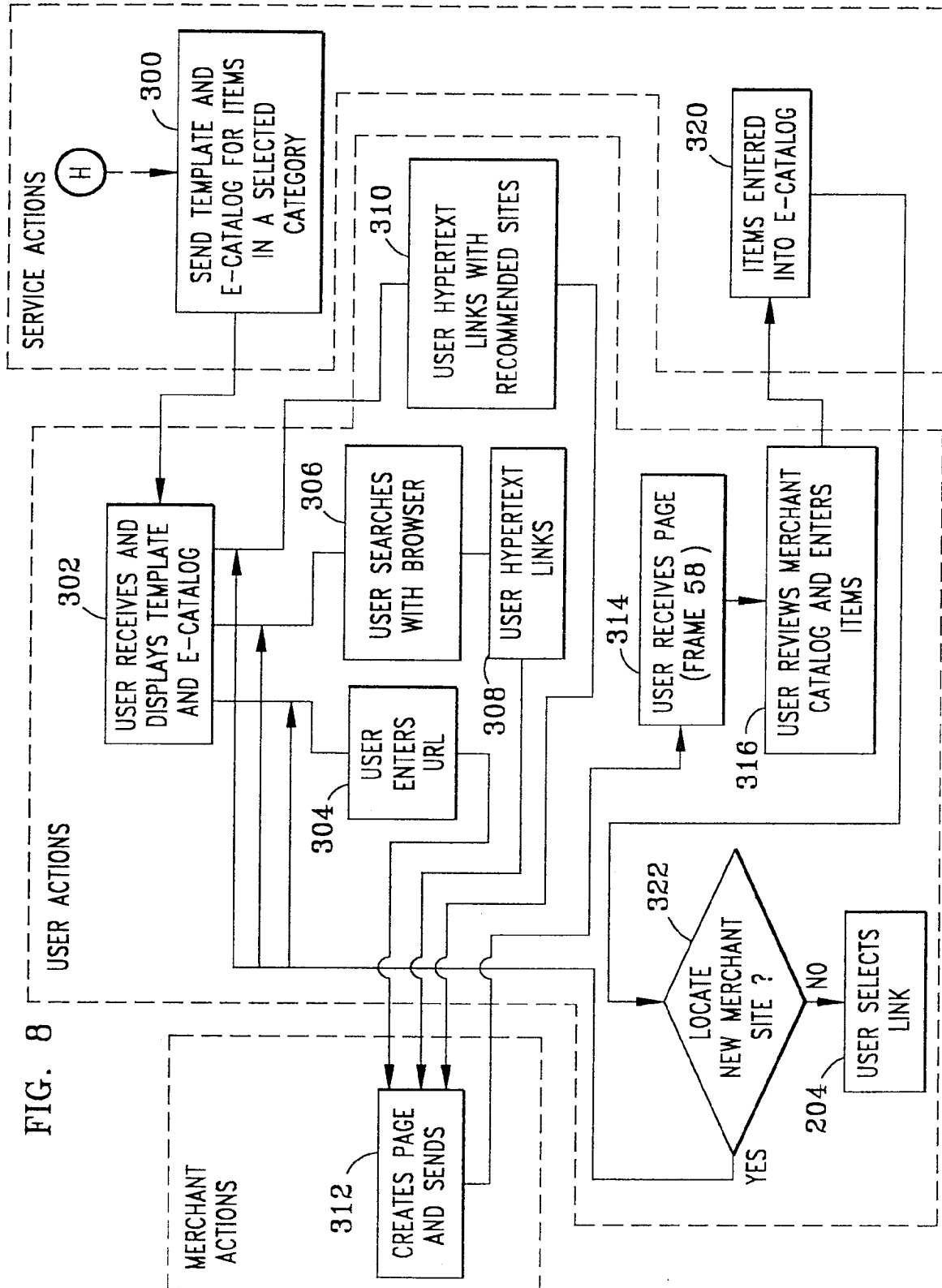


FIG. 7



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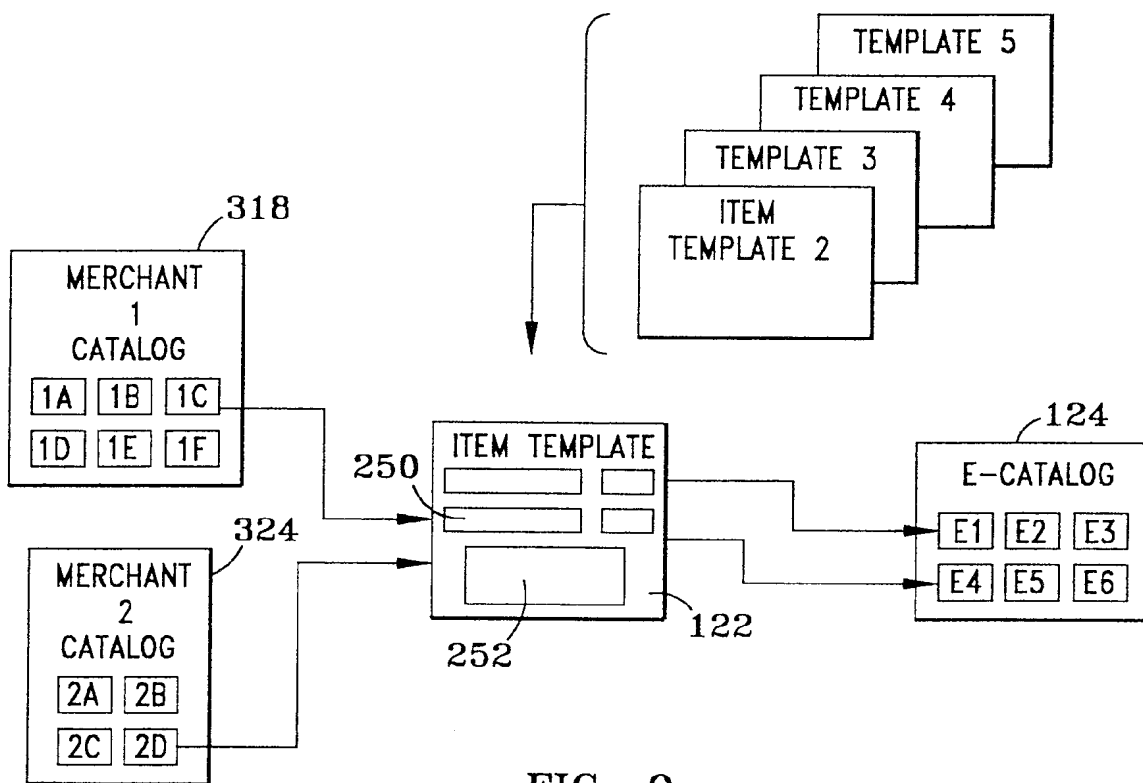


FIG. 9

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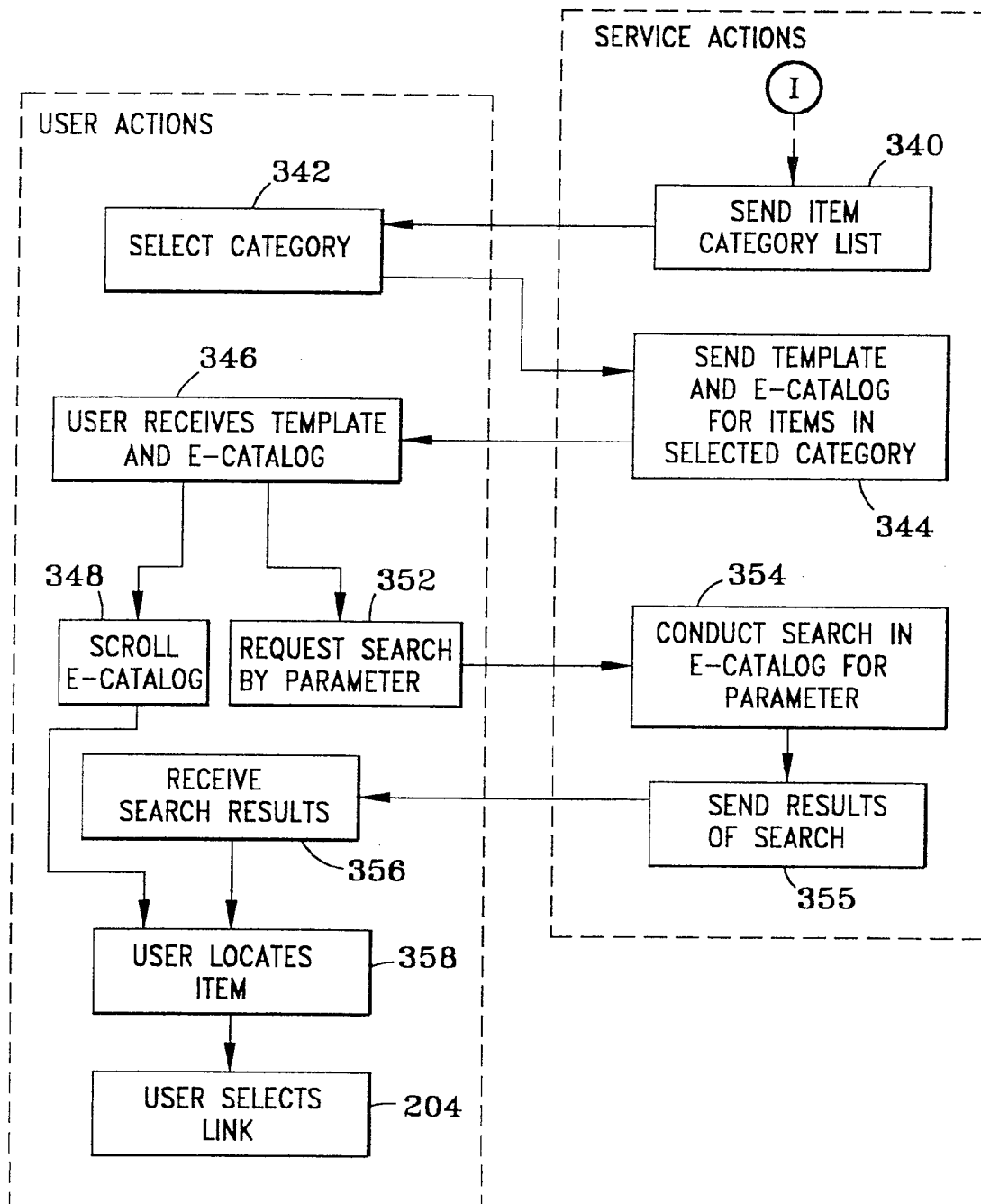


FIG. 10

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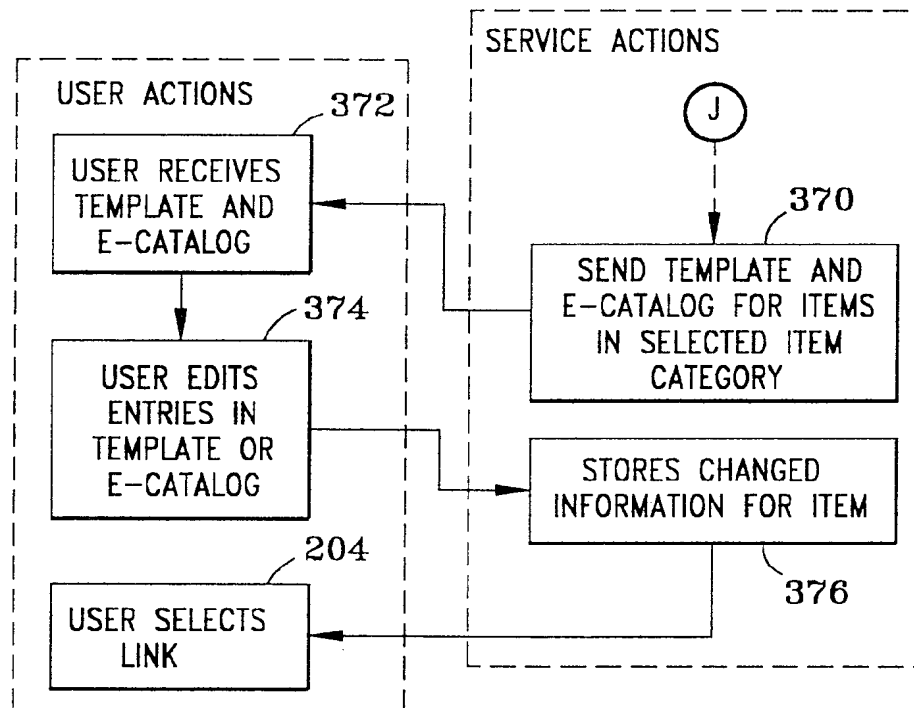


FIG. 11

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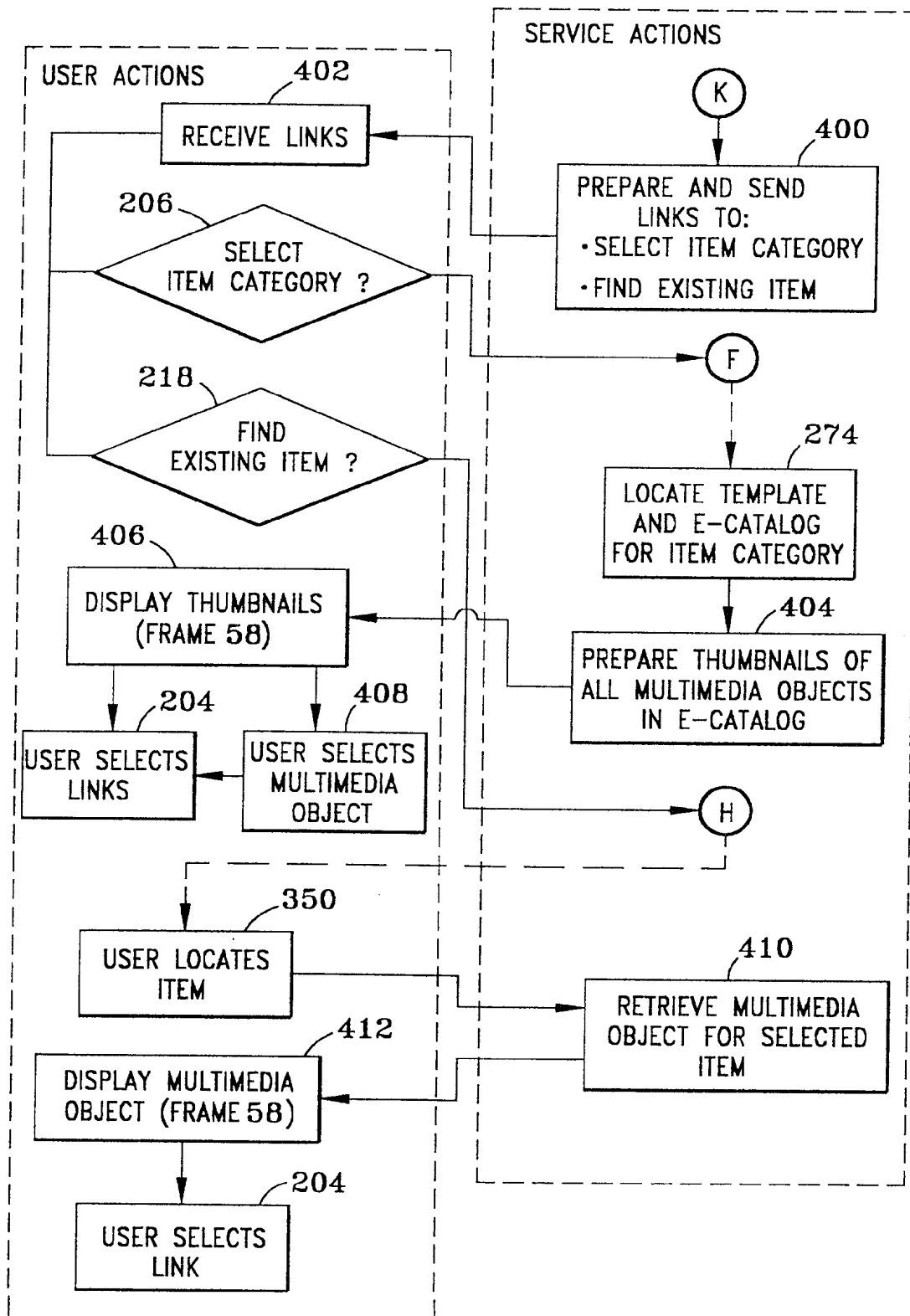


FIG. 12

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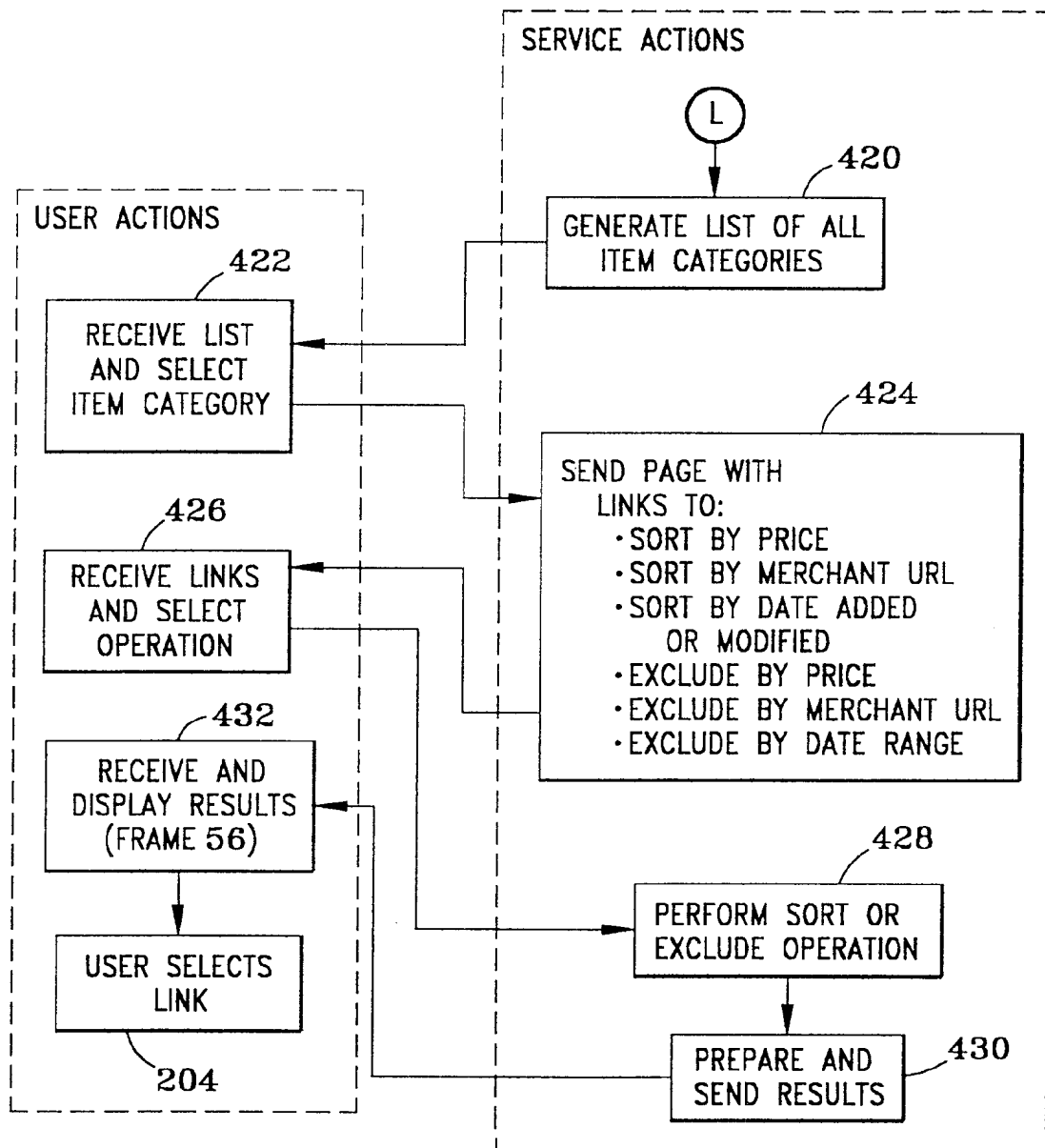
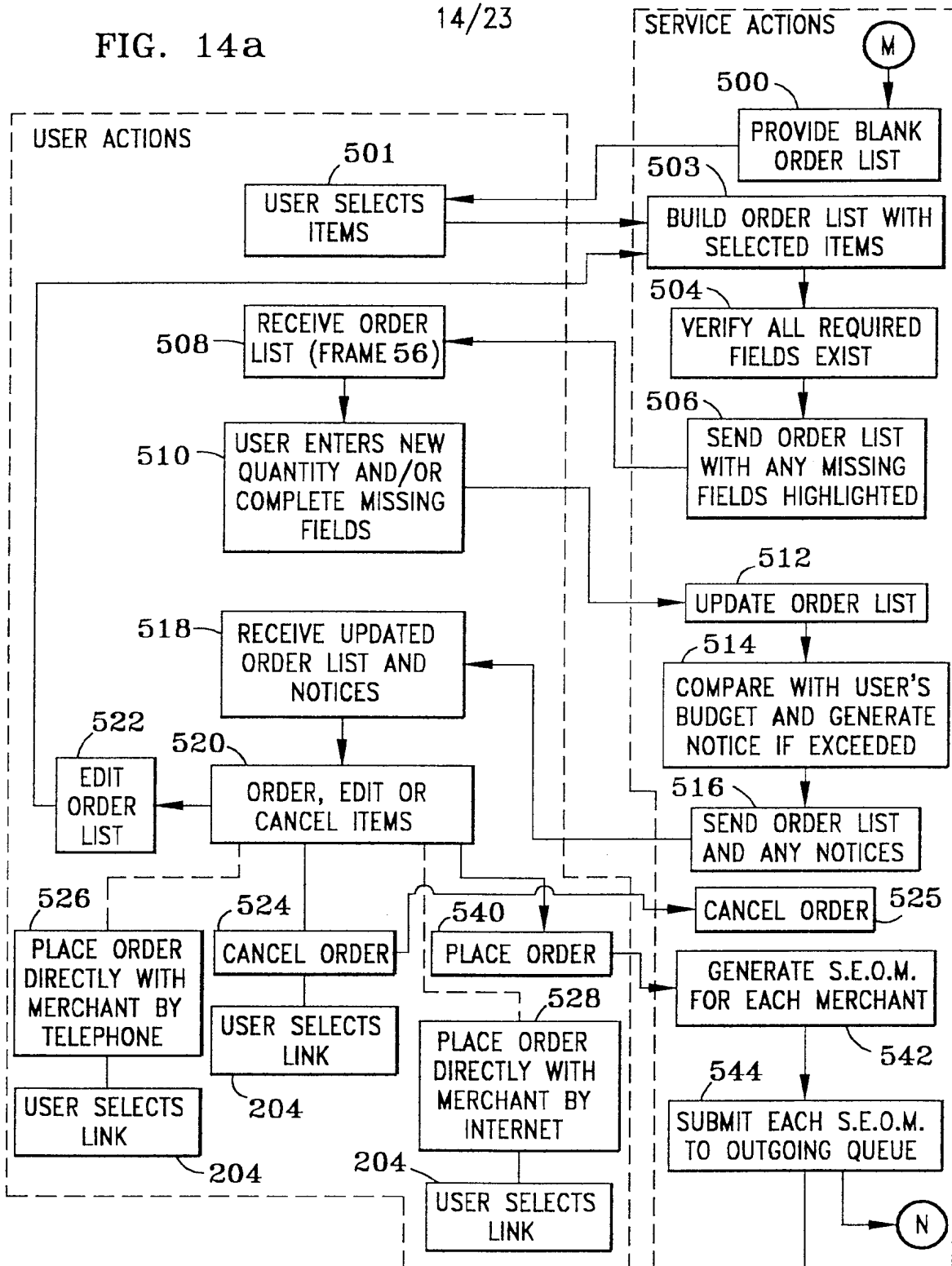


FIG. 13

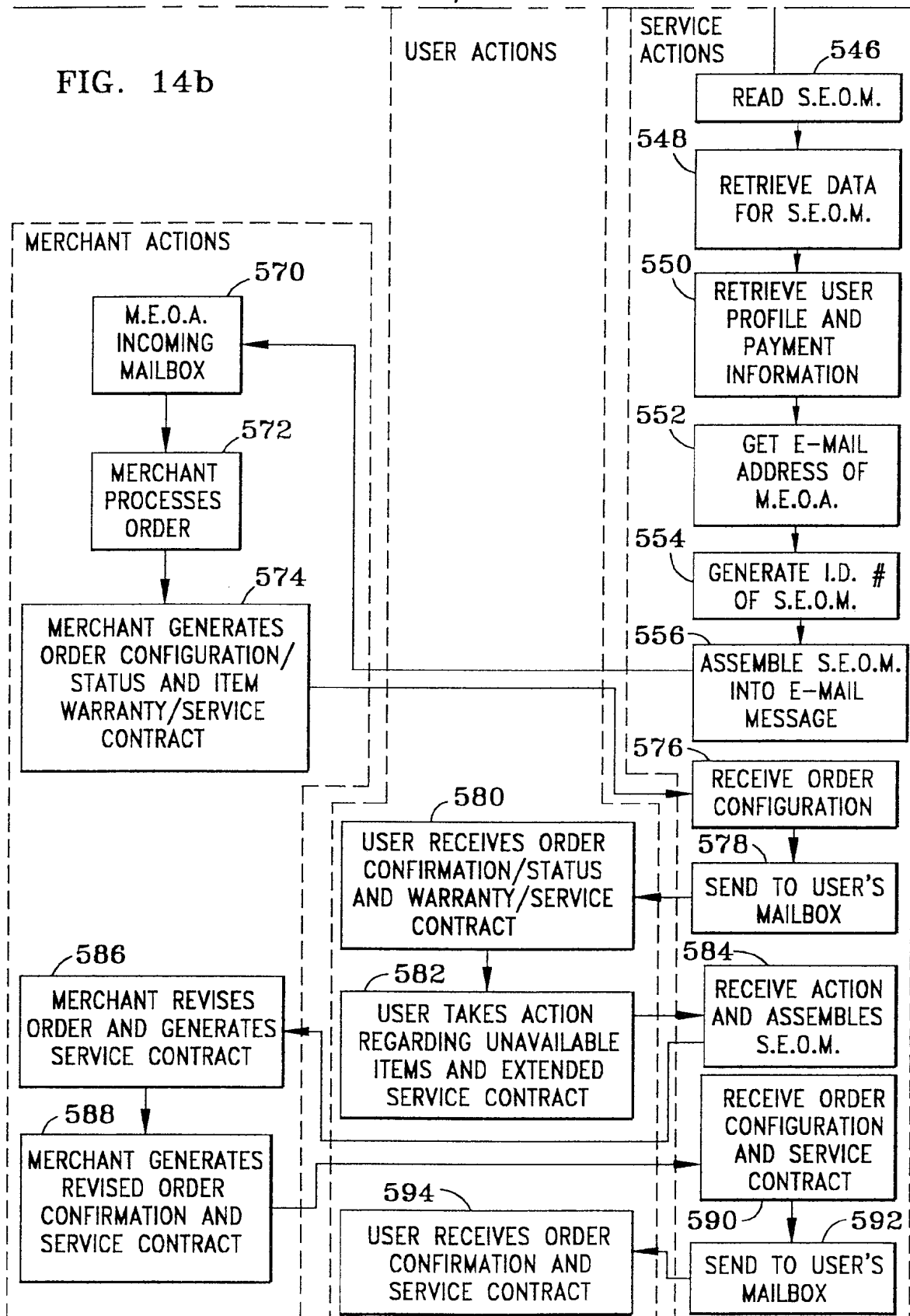
FIG. 14a

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FIG. 14b





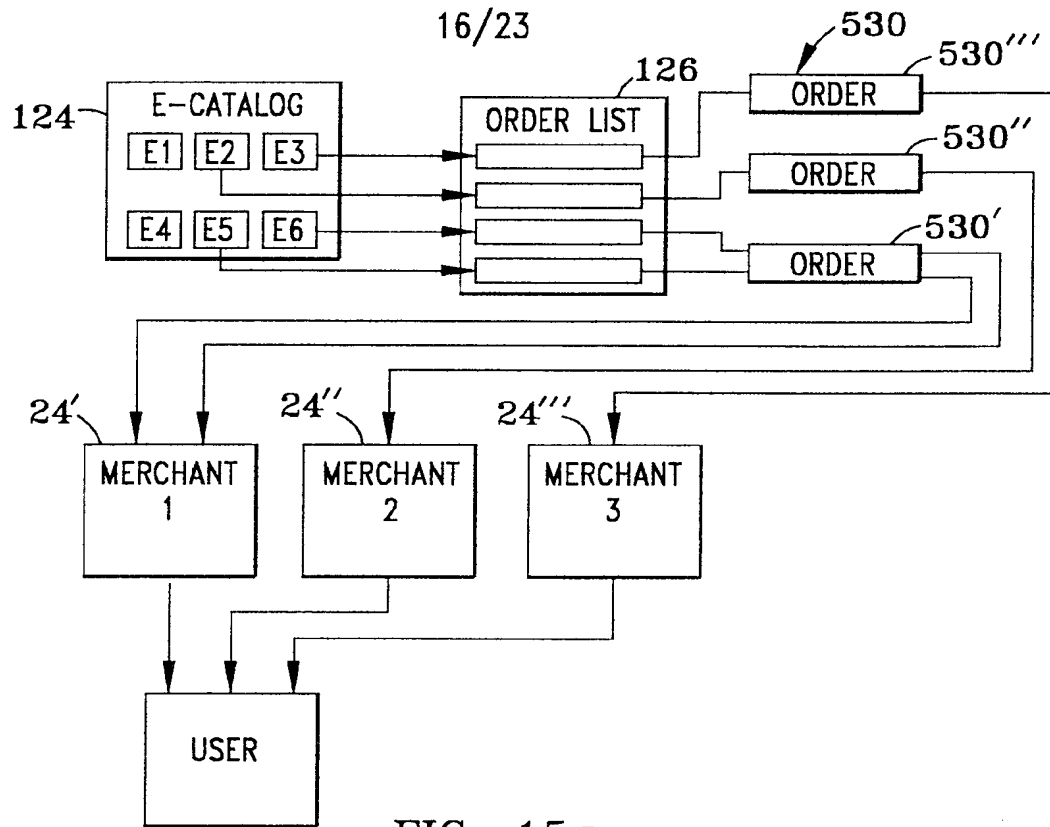


FIG. 15a

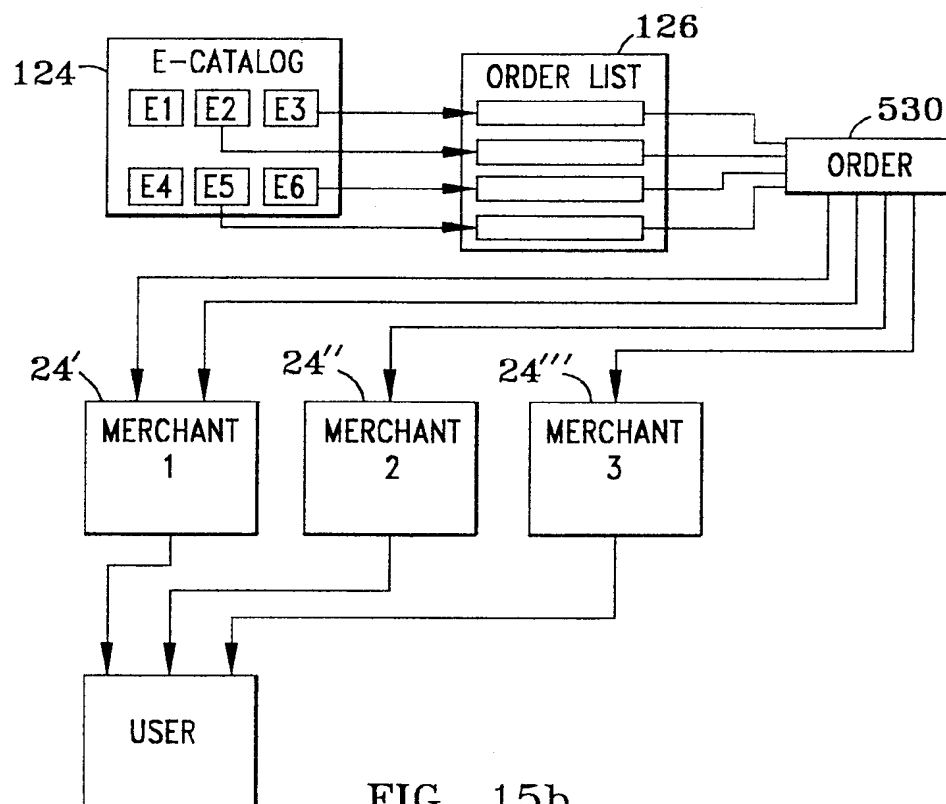


FIG. 15b

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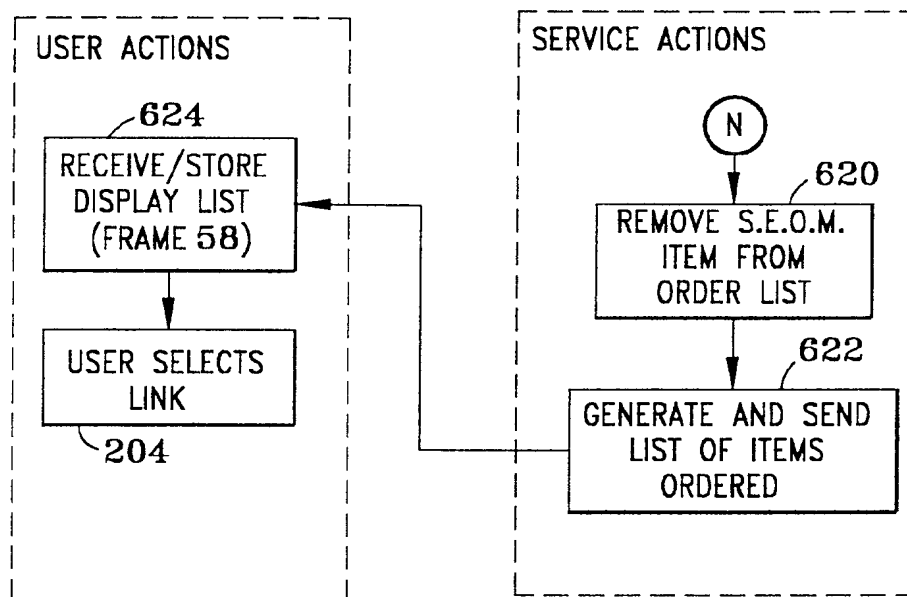
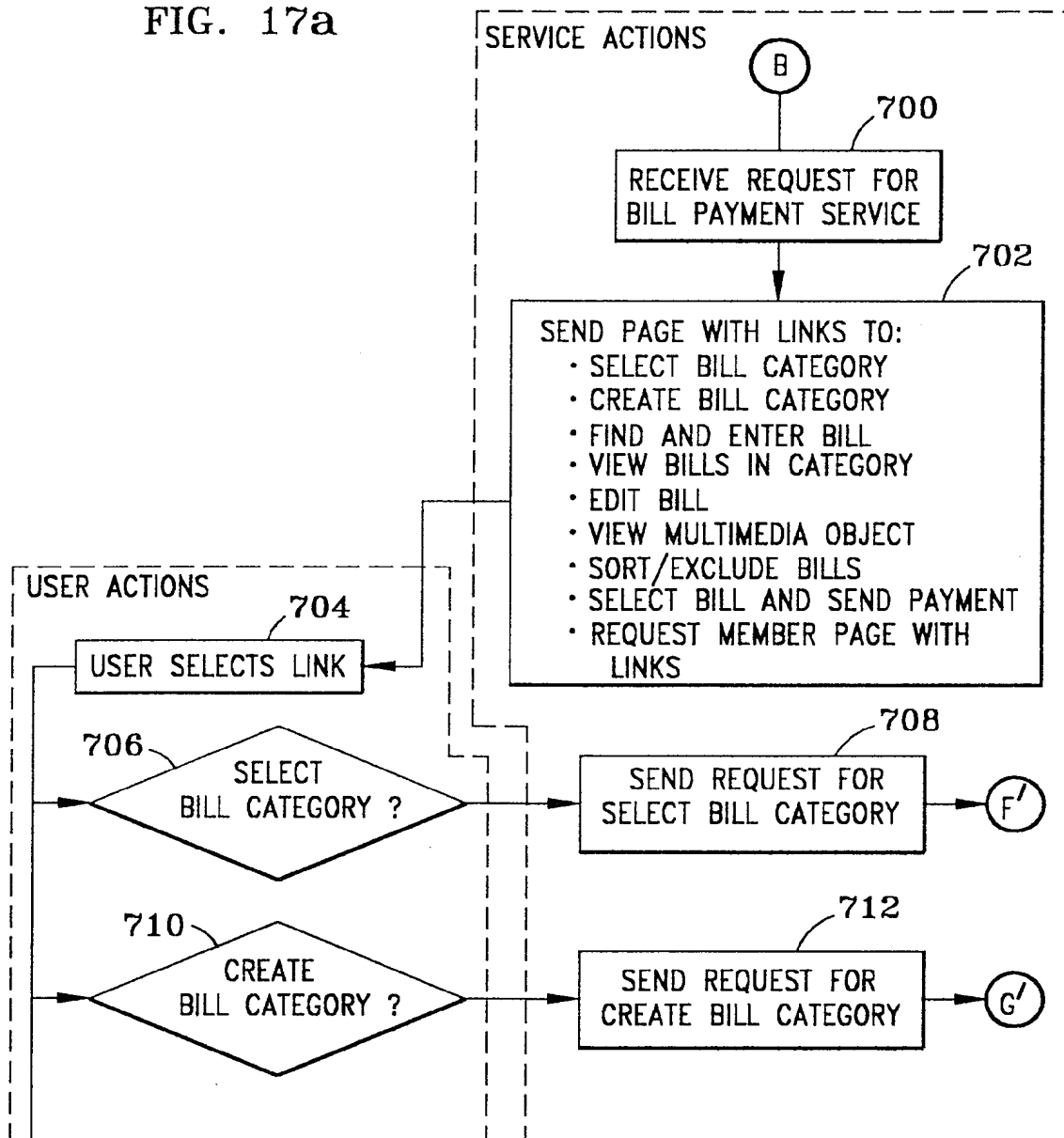


FIG. 16

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FIG. 17a



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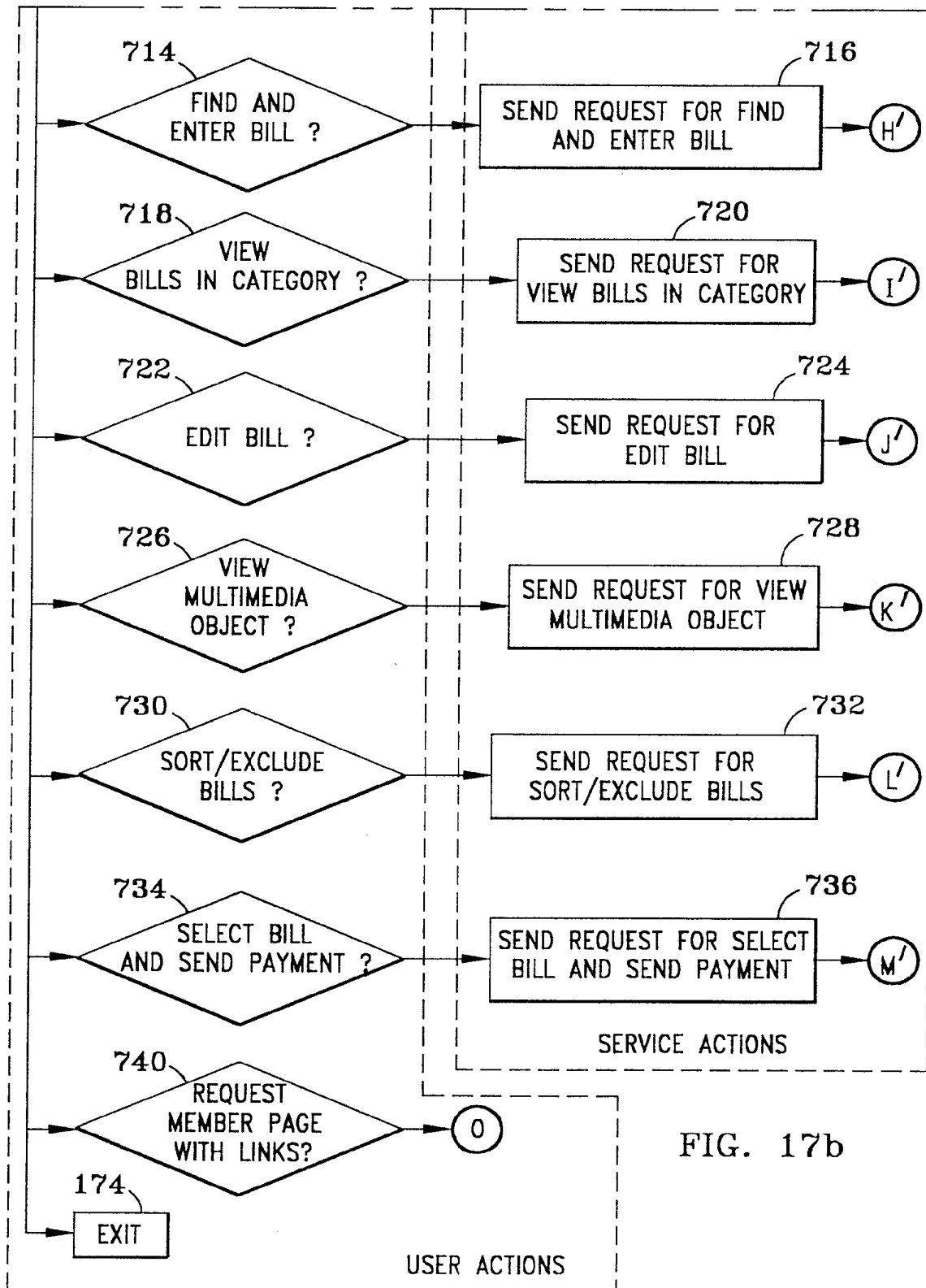
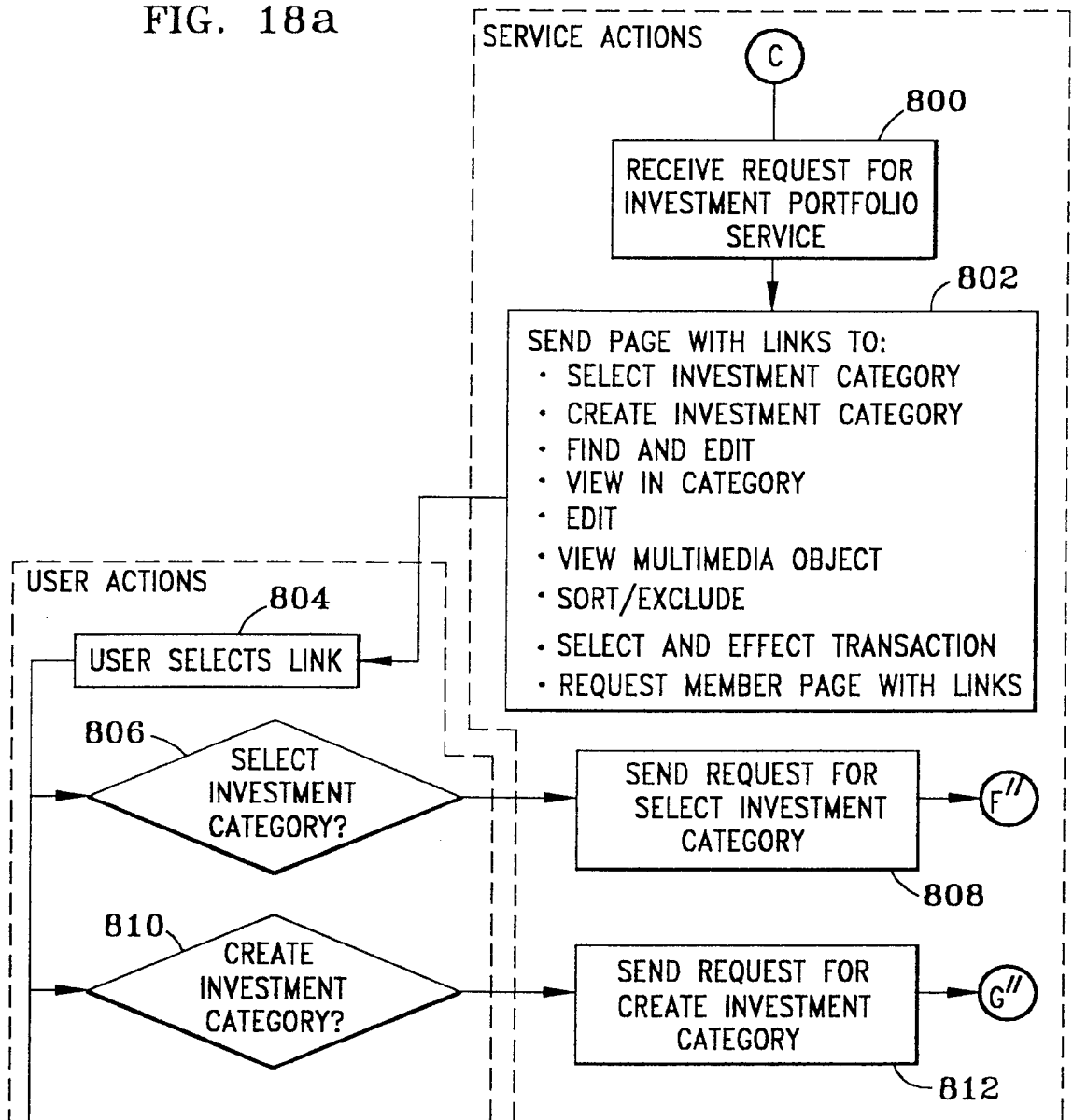


FIG. 17b

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FIG. 18a



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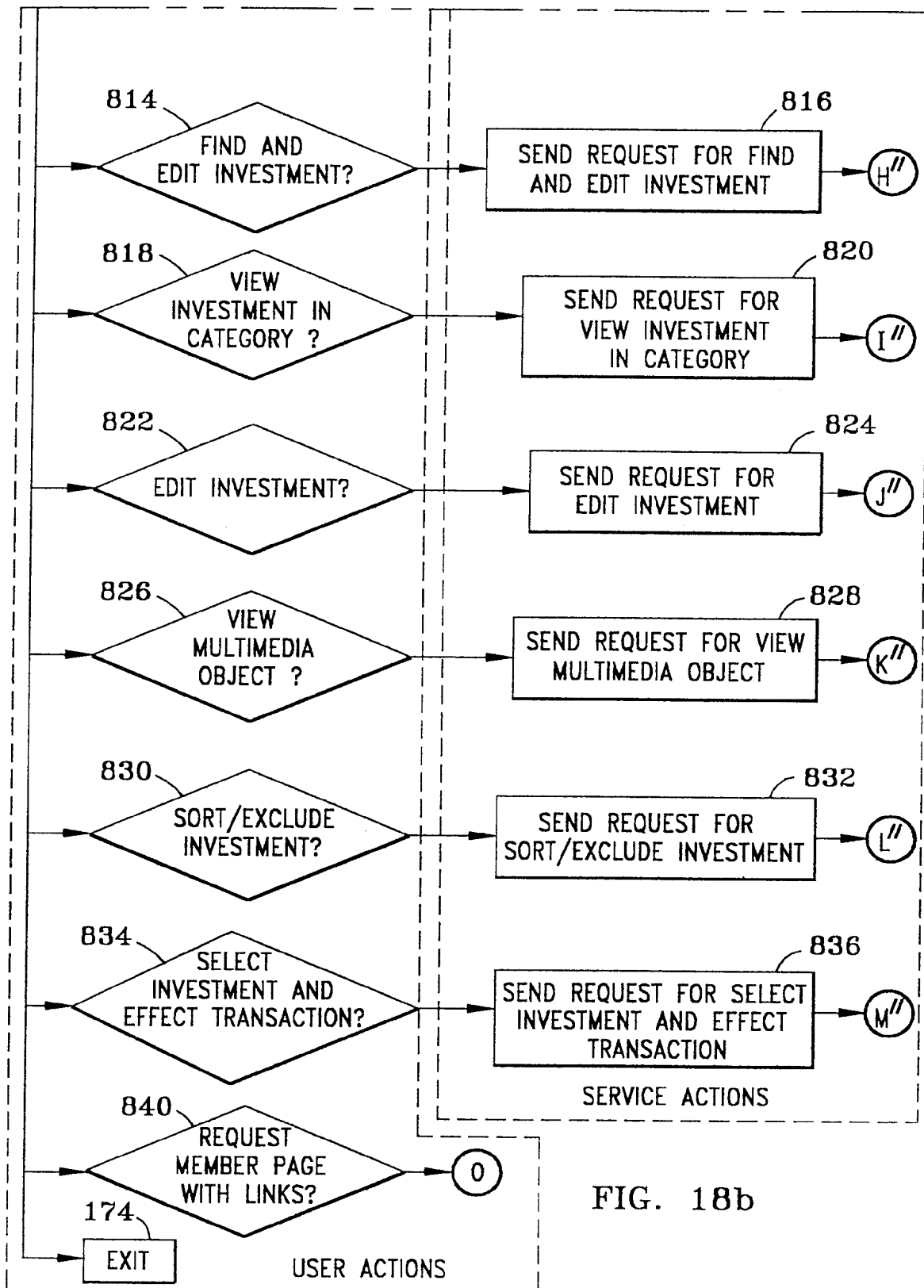


FIG. 18b

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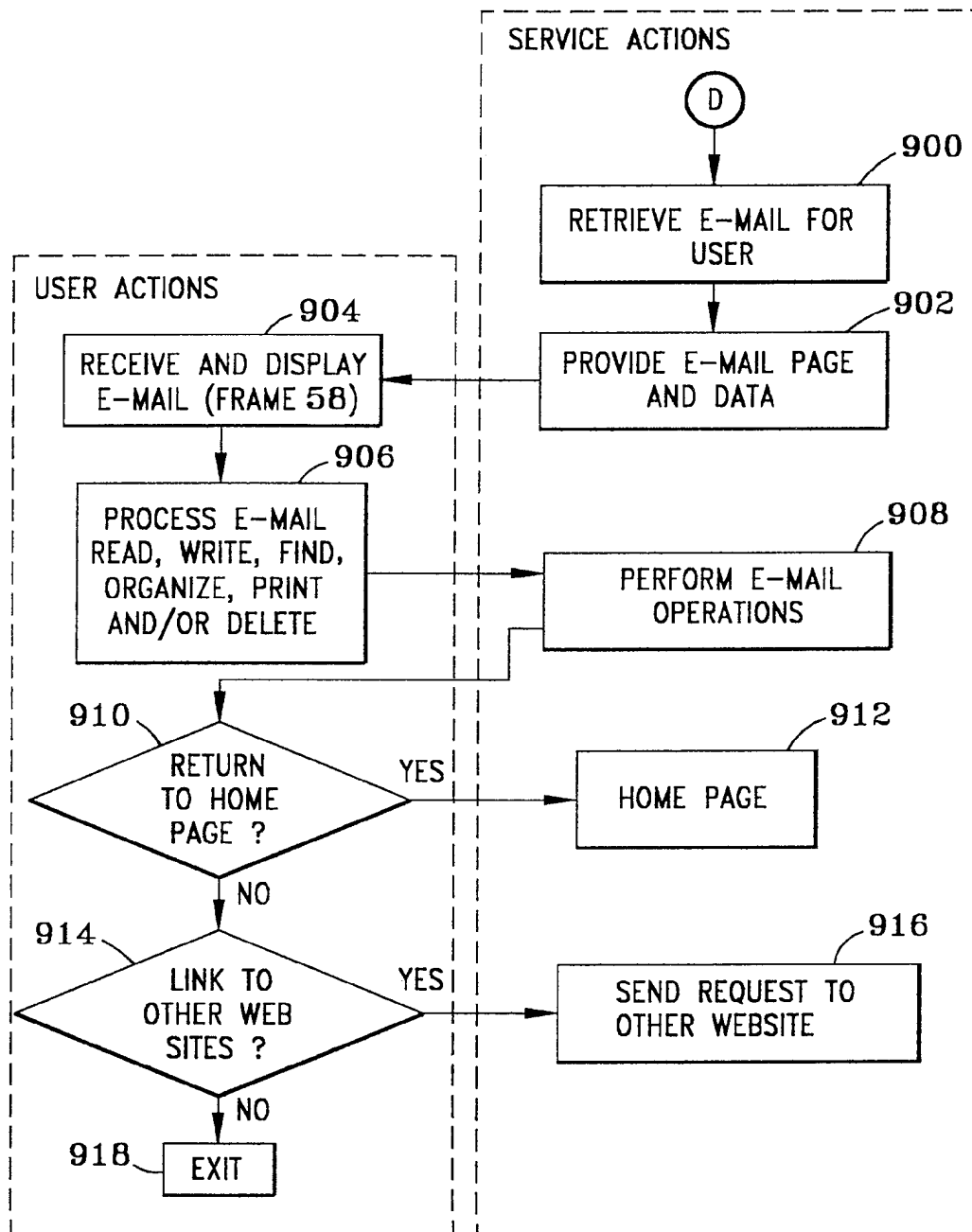


FIG. 19

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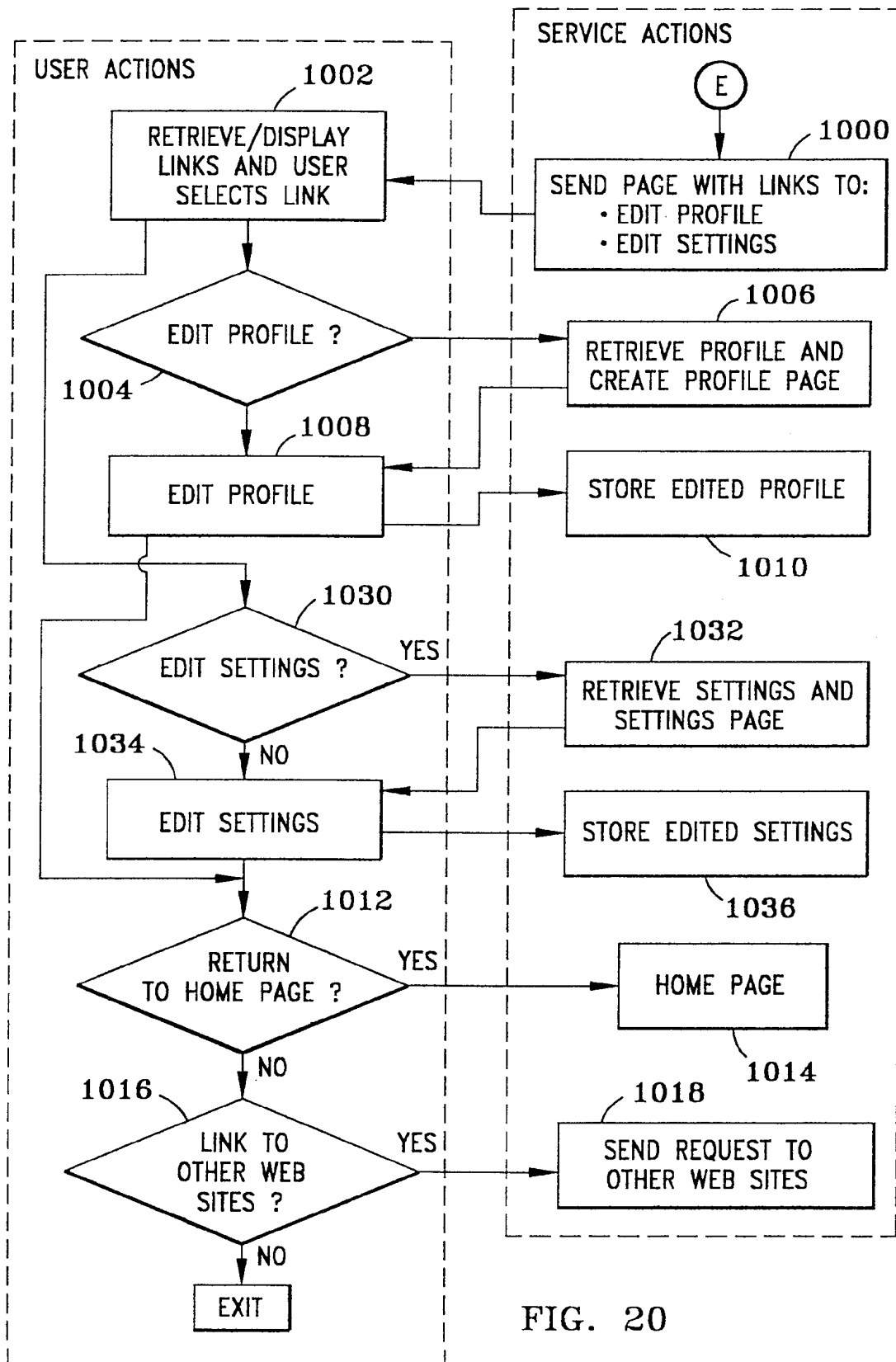


FIG. 20



## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/27903

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(6) :GO6F 17/60  
US CL :705/27,36

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/10,27,36

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,E ----- Y,E	US 5,862,325 A (REED et al.) 19 January 1999 col. 8, lines 5-54; col. 9, lines 12-25; col. 15, lines 23-67; col. 16, lines 29-30; col. 18, lines 52-67; col. 19, lines 1-19; col. 23, lines 13-39; col. 29, lines 12-56; col. 35, lines 40-65; col. 41, lines 13-17; col. 44, lines 48-53; col. 86, lines 27-30; col. 93, lines 39-52; col. 94, lines 63-65; col. 95, lines 27-52; col. 96, lines 24-47; col. 97, lines 28-33; col. 105, lines 35-67; col. 115, lines 41-67; col. 116, lines 1-49; col. 119, lines 12-26; col. 121, lines 17-22; col. 123, lines 9-15. ----- col. 8 lines 5-50; col. 15, lines 23-62; col. 95, lines 27-52; col. 105, lines 35-51; col. 115, lines 41-67; col. 116, lines 1-49; col. 121, lines 17-22; col. 123, lines 9-15.	1-15, 19-49, 54-55 ----- 16-18, 50-53

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*E* earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*G* document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means	
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Date of the actual completion of the international search

03 MARCH 2000

Date of mailing of the international search report

12 APR 2000

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Authorized officer

Allen MacDonald

Telephone No. (703) 305-3900

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/27903

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US 5,930,774 A (CHENNAULT) 27 July 1999, col. 3, lines 39-58; col. 4, lines 23-51; col. 7, lines 49-67; col. 8, lines 1-16.	16-18, 50-53
A,E	US 6,023,683 A (JOHNSON et al.) 8 February 2000, abstract.	1-55
A,P	US 5,855,008 A (GOLDHABER et al.) 29 December 1998, abstract.	1-55
A,P	US 5,897,622 A (BLINN et al.) 27 April 1999, abstract.	1-55
A,P	US 5,970,471 A (HILL) 19 October 1999, abstract.	1-55
A,P	US 5,991,735 A (GERACE) 23 November 1999, abstract.	1-55

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/27903

## B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

### STN/CAS, DIALOG

transaction, electronic commerce, database, merchant, network, billing, investment, payment, template, form, screen, display, purchase, buy, module, portfolio, catalog

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
11 March 2004 (11.03.2004)

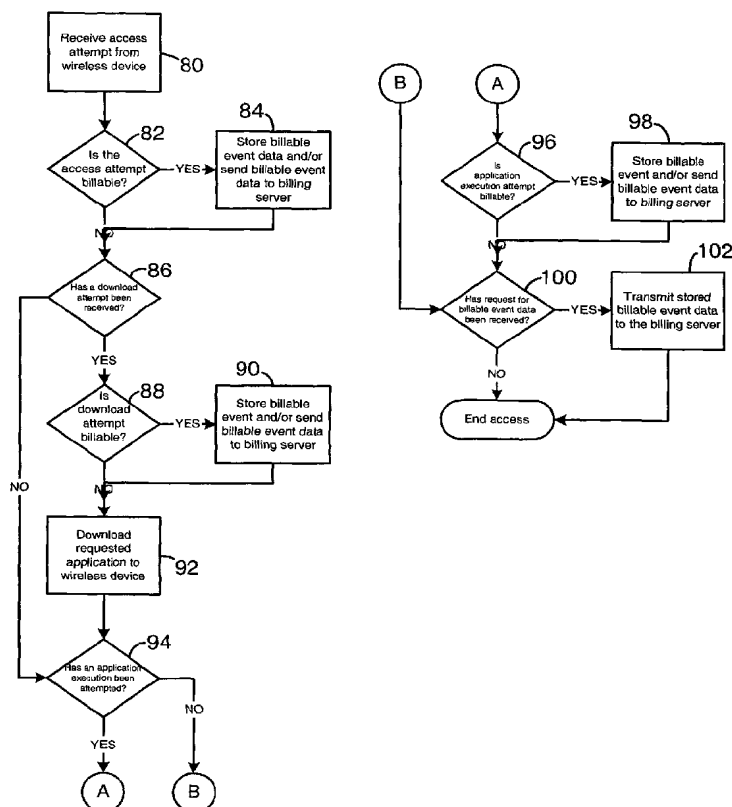
PCT

(10) International Publication Number  
**WO 2004/021131 A2**

- (51) International Patent Classification<sup>7</sup>: **G06F** (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, ME, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.
- (21) International Application Number: PCT/US2003/027014
- (22) International Filing Date: 28 August 2003 (28.08.2003)
- (25) Filing Language: English
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- (30) Priority Data: 10/231,970 30 August 2002 (30.08.2002) US
- (71) Applicant: **QUALCOMM INCORPORATED** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US).
- (72) Inventors: **WAKE, Susan L.**; 3811 Violet Glen, Escondido, CA 92025 (US). **YU, Julie**; 48700 Algonquin Court, San Diego, CA 92130 (US).
- (74) Agents: **MINHAS, Sandip S.** et al.; QUALCOMM Incorporated, 5775 Morehouse Drive, San Diego, CA 92121 (US).
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR THIRD PARTY APPLICATION SALES AND SERVICES TO WIRELESS DEVICES



(57) Abstract: A system, method, and computer program for billing wireless device subscribers for their interaction with applications and services resident on third party computer devices that are accessible through a wireless network. The wireless devices, such as cellular telecommunication devices, communicate with other computer devices across a wireless network and an end-user thereof, who is not necessarily the subscriber for the wireless service, can selectively download and execute software applications. Third party computer devices, such as application download servers, are accessible on the wireless network and selectively provide applications and services to the wireless devices, and the interaction of the wireless devices with the third party computer devices causes billable events to occur, and a billing server gathers the billable event data, generates billing for the wireless device subscribers, and effects payment of the third parties for billable events at the computer devices of that third party.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## SYSTEM AND METHOD FOR THIRD PARTY APPLICATION SALES AND SERVICES TO WIRELESS DEVICES

### BACKGROUND OF THE INVENTION

#### *I. Field of the Invention*

[0001] The present invention generally relates to wireless devices and wireless networks. More particularly, the invention relates to a system and method that permits third party application sales and services to wireless telecommunication devices across a wireless network, and the system properly accounts for and bills wireless service subscribers, and provides the appropriate proceeds to the third party for sold applications and services.

#### *II. Description of the Related Art*

[0002] Wireless devices, such as cellular telephones, communicate packets including voice and data over a wireless network. In existing wireless telecommunication systems, such as cellular telecommunication systems, fees are charged to the subscriber for the initial activation of a telecommunication device and then fees can be charged for ongoing airtime and device usage. However, existing systems typically do not account for other activities at the telecommunication device beyond airtime usage.

[0003] Further, if the subscriber of the wireless device desires to download and use a software application or upgrade the functionality of the telecommunication device, the user will typically either call a service provider or contact the service provider through another electronic means, such as through a separate Internet access. In some instances, the service provider can transmit the application to the wireless device across the wireless network (through a one time direct access download) or allow the user access a network site with the wireless device through the wireless network and at such site the application is downloadable or accessible to the subscriber. Otherwise service personnel of the provider must have physical access to the telecommunication device to install the software or upgrade the components thereof.

[0004] The existing systems for monitoring and billing for wireless telecommunication device activity thus do not allow a service provider to bill or account for activities by the wireless device that not occur on the computer devices of that provider. In order to provide any additional billed services to the subscriber or end-user of the telecommunication device, the service provider must have the subscriber contact and

use the computer devices of the service provider which greatly limits the value-added service that a provider can make available to its subscribers. Accordingly, it is to a system and method that allows the monitoring and billing of wireless device activity that the present invention is primarily directed.

### **SUMMARY OF THE INVENTION**

[0005] The present invention is a system, method, and computer program for billing wireless device subscribers for their interaction with applications and services resident on third party computer devices that are accessible through a wireless network. The wireless devices, such as cellular telecommunication devices, communicate with other computer devices across a wireless network and an end-user thereof, who is not necessarily the subscriber for the wireless service for that wireless device, can selectively download and execute software applications on the computer platform. Also on the wireless network are third party computer devices, such as application download servers, that selectively provide value-added applications and services to the wireless devices and the interaction of the wireless devices with the applications of the third party computer devices causes billable events to occur, such as an application download execution, or access. A billing server ultimately gathers the billable event data across the wireless network, generates billing for the wireless device subscribers, and effects payment of the third party for the billable events of wireless devices with the computer devices of the third party.

[0006] The system includes one or more wireless devices where each include a computer platform and an end-user thereof, with one or more third party computer devices that selectively provide applications and services to the one or more wireless devices across the wireless network, and the interaction of the wireless devices with the applications or services of the third party computer devices causes one or more billable events to occur for the interacting wireless device. At least one billing server is in the system that gathers at least the billable event data from wireless device interaction with the one or more third party computer devices, and also effects payment of the third party based upon the gathered billable event data for the billable events at the third parties' computer devices. In one embodiment, the billing server also generates a bill for each wireless device for the billable events.

[0007] The method of billing for third party applications and services provided to the wireless devices of subscribers to a wireless network includes the steps of causing a billable event to occur through wireless device interaction with a third party computer device, aggregating the billable events into billable event data at a billing server, billing the appropriate subscriber for each billable event based upon the billable event data at the billing server, and effecting payment of the third party for the billable events at the third party computer device. The method can also include the steps of billing the wireless subscriber from the billing server and prompting the third party computer devices to transmit gathered billable event data to the billing server.

[0008] The system and method accordingly allow wireless service providers the ability to provide and bill for wireless telecommunication device activity, such as application download and execution, with third party computer devices accessible through the wireless network. The system and method accordingly give an advantage to the service provider in that the provider can give its subscribers access to additional value-added services of third parties and effectively capture and share the revenue from the billed services. Moreover, the billing system does not require the subscriber to contact the service provider or the third party to receive or access the additional service.

[0009] Other objects, advantages, and features of the present invention will become apparent after review of the hereinafter set forth Brief Description of the Drawings, Detailed Description of the Invention, and the Claims.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0010] Fig. 1 is a representative diagram of a wireless network and the computer hardware and wireless devices that can be used within the wireless device billing system.

[0011] Fig. 2 is a block diagram illustrating a cellular telecommunication network with the billing system tracking billable events occurring on wireless telephones that interact with servers and other computer devices across the wireless network.

[0012] Fig. 3 is an interactive menu that is presented to end-users of the wireless device when contacting a third party application download server across the wireless network, and a plurality of options for interaction is represented on the display.

[0013] Fig. 4 is a flowchart illustrating one embodiment of the process executing on the computer platform of the third party computer application download server wherein



billable event data is either transmitted to the billing server as the events are completed, or stored and transmitted to the billing server upon request.

[0014] Fig. 5 is a flowchart illustrating one embodiment of the process executing on the billing server that receives a request to generate billing for the billable events of the wireless devices at third party computer devices, and the billing server gathers and processes the billable event data for each of the wireless devices to create billing information that can be transmitted to the carrier or other billing entity for the wireless devices, and effects payment of the third parties for the billable events at their respective computer devices.

### DETAILED DESCRIPTION OF THE INVENTION

[0015] With reference to the figures in which like numerals represent like elements throughout, Fig. 1 illustrates one embodiment of the present inventive system 10 for tracking billable events occurring through wireless devices, such as cellular telephone 12, in communication across a wireless network 14, with third party computer devices, such as a third party application download server 30, that selectively downloads software applications or other data to the wireless devices across a wireless communication portal or other data access to the wireless network 14. In developing wireless networks 14, if the end-user of the wireless device desires to download and use a software application, the end-user will attempt to connect to an application download server, either the carrier's server or a third party application download server 30, through bridging a communication connection to the wireless network 14, and attempt to access and download the desired software application. Once the wireless device contacts the application download server 30, an initial contact is made and the application download server 30 can determine what applications and data are available to that wireless device 12,18,20,22 and send the appropriate information, such as a menu (Fig. 3), for display on the wireless device 12,18,20,22 so the end-user can learn of the available applications and services.

[0016] As shown here, the wireless device can be a cellular telephone 12, with a graphics display 13, a personal digital assistant 18, a pager 20 with a graphics display, which is shown here as a two-way text pager, or even a separate computer platform 22 that has a wireless communication portal, and may otherwise have a wired connection 24 to a network or the Internet. The system 10 can thus be performed on any form of remote computer module including a wireless communication portal, including without

limitation, wireless modems, PCMCIA cards, access terminals, personal computers, access terminals, telephones without a display or keypad, or any combination or sub-combination thereof. Further, the term "application" as used herein is intended to encompass executable and nonexecutable software files, raw data, aggregated data, patches, and other code segments.

[0017] In the system 10, one or more wireless devices 12,18,20,22 that each selectively communicate with other computer devices across a wireless network 14, an end-user thereof who can selectively download and execute software applications. The wireless devices 12,18,20,22 to one or more third party computer devices, such as third party application download server 30 and stand-alone server 32, and the interaction of the wireless devices with the applications of the third party computer devices causes one or more billable events, and at least one billing server 16 gathers at least the billable event data for the billable events from wireless device interaction with the one or more third party computer devices (servers 30 and 32). The billable events can be the purchase, download and/or execution of an application, access to a menu, wireless device tools and diagnosis, or any other value-added data interaction between the wireless device 12,18,20,22 and the third party computer device (server 30 and 32). The billing server 16 then effects payment of the third party for the billable events at that third parties servers, as is more further described herein.

[0018] The one or more wireless devices 12,18,20,22, typically at the direction of an end-user operating the device, selectively communicate with other computer devices across a wireless network, application download server 30 or third party stand alone server 32, both shown here on a local server-side network 26 with other computer elements in communication with the wireless network 14, such as a billable event database 28 that contains the billable event data for the wireless devices. The application download server 30 and a stand-alone server 32 provide value-added services to the wireless devices, such as downloadable applications and other interaction, such as live stock quotes, news, and interactive games. All of the components can work in tandem to gather data relative to billable events of the wireless devices 12,18,20,22 and aggregate the billable event data at the billing server 16 as is further described herein. However, it should be noted that all server-side functions can be performed on one server, such as billing server 16. Further, any computer or server-

side computer platform can provide separate services and processes to the wireless devices 12,18,20,22 across the wireless network 14.

[0019] Fig. 2 is a block diagram that more fully illustrates the components of the wireless network 14 and interrelation of the elements of the system 10. The wireless network 14 is merely exemplary and can include any system whereby remote modules, such as wireless devices 12,18,20,22, communicate over-the-air between and among each other and/or between and among components of a wireless network 14, including, without limitation, wireless network carriers and/or servers. The server side components are a billing server 16, third party application download server 30, a billable event database 28, a wireless device database 34, and a third party applications database 36. Other server-side components will be present on the cellular data network with any other components that are needed to provide cellular telecommunication services. The server-side components as embodied in Fig. 2 can by themselves create a billing system 10 solely through tracking applications downloaded from the third party application download server 30 and the billing for the download will be generated through correlation of the billable event database 28 and wireless device database 34 by the billing server 16. The third party application download server 30 can have a separate third party applications database 36 that provides applications and other services to the wireless devices 12,18,20,22. With the use of third party hardware readily scalable, the number of computer devices that can be made accessible to the wireless devices is theoretically unlimited.

[0020] The server-side components communicate with a carrier network 40 through a data link, such as the Internet, a secure LAN, WAN, or other network. The carrier network 40 controls messages (generally in the form of data packets) sent to a messaging service controller ("MSC") 42. The carrier network 40 communicates with the MSC 42 by a network, the Internet and/or POTS ("plain ordinary telephone system"). Typically, the network or Internet connection between the carrier network 40 and the MSC 42 transfers data, and the POTS transfers voice information. The MSC 42 is connected to multiple base stations ("BTS") 44. In a similar manner to the carrier network, the MSC 42 is typically connected to the BTS 44 by both the network and/or Internet for data transfer and POTS for voice information. The BTS 44 ultimately broadcasts messages wirelessly to the wireless devices, such as cellular telephone 12, by short messaging service ("SMS"), or other over-the-air methods known in the art.

[0021] The wireless device, such as cellular telephone 12, has a computer platform 50 that can receive and execute software applications transmitted from the application download server 16. The computer platform 50 includes, among other components, an application-specific integrated circuit (“ASIC”) 52, or other processor, microprocessor, logic circuit, programmable gate array, or other data processing device. The ASIC 52 is installed at the time of manufacture of the wireless device and is not normally upgradeable. The ASIC 52 or other processor executes an application programming interface (“API”) layer 54 that interfaces with any resident programs in the memory 56 of the wireless device. The memory can be comprised of read-only or random-access memory (RAM and ROM), EPROM, EEPROM, flash cards, or any memory common to computer platforms. The computer platform 50 also includes a local database 58 that can hold the software applications not actively used in memory 56, such as the software applications downloaded from the third party application download server 16. The local database 58 is typically comprised of one or more flash memory cells, but can be any secondary or tertiary storage device as known in the art, such as magnetic media, EPROM, EEPROM, optical media, tape, or soft or hard disk.

[0022] Cellular telephones and telecommunication devices, such as cellular telephone 12, are being manufactured with increased computing capabilities and are becoming tantamount to personal computers and hand-held personal digital assistants (“PDAs”). These “smart” cellular telephones allow software developers to create software applications that are downloadable and executable on the processor, such as ASIC 52, of the cellular device. The wireless device, such as cellular telephone 12, can download many types of applications, such as games and stock monitors, or simply data such as news and sports-related data. The downloaded data or executed applications can be immediately displayed on the display 13 or stored in the local database 58 when not in use. The software applications can be treated as a regular software application resident on the wireless device 12,18,20,22, and the user can selectively upload stored resident applications from the local database 58 to memory 56 for execution on the API 54. The user of the wireless device 12,18,20,22 can also selectively delete a software application from the local database 58. As a result, end-users of cellular telephones 12 can customize their telephones with programs, such as games, printed media, stock updates, news, or any other type of information or program available for download from application download servers through the wireless network 14.

- [0023] The use of these value-added services of third parties by the wireless device 12,18,20,22 cause billable events for which the wireless network service provider will bill the subscriber of the wireless device, who is not necessarily the end-user of the wireless device at the time of the billable event. The billable events typically occur from the end-user conducting some activity with applications provided from the third party application download server 30. Examples of billable events, include but are not to be limited to, downloading an application from a third party application download server 30 on the wireless network 14 to the wireless device computer platform 50; the execution of an application on the wireless device 12,18,20,22; accessing an application resident on another computer device on the wireless network 14, such as stand-alone server 32 through application download server 30, or a database such as third party application database 36; or other parameter of execution or interaction therewith.
- [0024] The system 10 allows a third party, such as an independent software vendor or developer, either through the third parties own computer devices or through a network carrier 40 servers, to provide its software applications as downloadable to the wireless device. A multitude of computer devices can be involved in the ultimate delivery of applications and services, and the wireless device 12,18,20,22 can make several accesses to one or more third party computer devices. The system 10 can thus after-bill the carrier 40 for their subscriber billable event transactions, which typical is a different fee than what the carrier 40 will use to bill their subscribers. Unless the payment of the third party vendor and developers is automatic, the system 10 will wait until payment from the carrier (or wireless device subscriber) are received, and then aggregate payments from multiple carriers as necessary and pay all third parties that are a member of the transactions. This provides the capability for the third party that otherwise sells an application or service to one or more carriers 40 to elected to share its payment with other parties, which the system 10 can account for.
- [0025] The billing server 16 can therefore aggregate all payments due each third party and creates a single or multiple payments to the third party. Moreover, the billing server 16, or another computer device in conjunction therewith, can accommodate any parameters of payment of a particular third party for billable events, such as converting payment to and from foreign currencies (with appropriate currency gain/loss between time of invoice and payment), withholding of any appropriate taxes (US or foreign), and any rebates or pricing incentives.

[0026] To illustrate the possible services provided from the third party application download server 30 to the wireless devices 12,18,20,22, Fig. 3 is a partial view 60 of the display 13 having an menu 62 displayed thereon listing potential interactions with the download server 30. Simple data for display at the wireless device is shown in an available news section 64, wherein the wireless device will pay for simple access to the data. Further, a plurality of applications downloadable to wireless devices 12,18,20,22, from the third party application download server 30 is shown in section 66. The subscriber for the wireless device (end-user or not) will be discretely billed if one or more of the applications are downloaded.

[0027] A communications section 68 is presented to the end-user wherein a variety of methods of communication with other devices on the wireless network 14 are provided. The billable event for use of the communication can be based per communication, such as e-mail, size of data communicated, or based upon the duration of a communication. A device tool section 70 can also be present that allows the wireless device 12,18,20,22 to upgrade, optimize, or fix any technically adjustable parameter. For example, a performance diagnosis can be effected from the third party application server 30 whereby the ongoing operation of the device can be alter through passing operational data from the wireless device 12,18,20,22 to the server, such as stand alone server 32, and the server 32 can manipulate the wireless device operation through the use of software commands. The wireless device subscriber can be billed for the use of any diagnosis tool. Additionally, software patches and other software fixes or upgrades can be posted to the tools section 70 to allow the wireless device 12,18,20,22 to maintain the most current versions of software on the computer platform 50.

[0028] The billable event data for the one or more wireless devices 12,18,20,22 is ultimately gathered at billing server 16 such that the billing information for each wireless device that the billing server 16 accounts for. As embodied in Fig. 2, the billing information will ultimately be provided to the carrier network 40 for billing to the carrier's subscriber. However, the billing server 16 itself can generate a bill to the wireless device subscriber, for whom it can access the information of the wireless device data 34. While the billable event data is ultimately gathered at the billing server 16, the third party computer device (application download server 30) can also gather the billable event data and transmit it periodically to the billing server 16. The third party computer device can transmit billable event data to the billing server 16 at the

completion of the billable event, upon query from the billing server 16, or at a predetermined interval of time, e.g. every 30 minutes while active. And if the billing server 16 further generates a bill for a wireless device 12,18,20,22 based upon the gathered billable event data, the generated bill can be transmitted from the billing server 16 to another computer device on the wireless network 14, such as a device on the carrier network 40 for use by the carrier in billing its subscribers.

[0029] Fig. 4 is a flowchart illustrating one embodiment of the process executing on the computer platform of the third party computer application download server 30 wherein billable event data is either transmitted to the billing server 16 as the events are completed, or stored and transmitted to the billing server 16 upon request. The third party application download server 30 receives an access attempt from a wireless device 12,18,20,22, as shown at step 80, and then a determination is made as to whether the access attempt is in itself a billable event, as shown at decision 82. If the access is a billable event at decision 82, then the third party application download server 30 stores the billable event data, or transmits the data to the billing server 16, or both, as shown at step 84. Otherwise, if the access attempt is not billable at decision 82, or after the billable event data storage or transmission step 84, a determination is then made as to whether a download attempt has been received, as shown at decision 86.

[0030] If a download attempt has not been detected at decision 86, the process forwards to decision 94 which is further described herein. If a download attempt has been detected at decision 86, a determination is then made as to whether the download attempt is billable, as shown at decision 88. If the download attempt is a billable event at decision 88, then the third party application download server 30 stores the billable event data, or transmits the data to the billing server 16, or both, as shown at step 90. Otherwise, if the download attempt is not billable at decision 88, or after the billable event data storage or transmission step 90, the requested application is downloaded to the wireless device 12,18,20,22, as shown at step 92.

[0031] After the application has been downloaded at step 92, or if an application download attempt has not been received at decision 86, a determination is made as to whether the execution of an application resident on the third party application download server 30 has been attempted, as shown at decision 94. If an execution of an application has not been attempted at decision 94, then the process forwards to decision 100, which is further described below. If the execution of an application has been attempted at

decision 94, a determination is then made as to whether the execution attempt is billable, as shown at decision 96. If the execution attempt is a billable event at decision 96, then the third party application download server 30 stores the billable event data, or transmits the data to the billing server 16, or both, as shown at step 98. Otherwise, if the download attempt is not billable at decision 96, or after the billable event data storage or transmission step 98, or if an execution of application was not attempted at decision 94, a determination is then made as to whether the billing server 16 has requested the stored billable event data from the third party application download server 30, as shown at decision 100. If the stored billable event data has been requested at decision 100, then the stored billable event data is transmitted to the billing server 16 as shown at step 102 and then the process or thread of application access of the wireless device ends. Otherwise, if the request for transmission of the billable event data has not received at decision 100, then the process ends. The process of Fig. 4 will then reoccur upon an access attempt of the wireless device 12,18,20,22, such as the device attempting to access an application in section 66 of the menu 62 of Fig. 3.

[0032] Fig. 5 is a flowchart illustrating one embodiment of the process executing on the billing server 16 that receives a request to generate billing for the billable events of the wireless devices 12,18,20,22 at third party computer devices, such as third party application download server 30, and the billing server 16 gathers and processes the billable event data for each of the wireless devices 12,18,20,22 to create billing information that can be transmitted to the carrier 40 or other billing entity for the wireless devices, and can effect payment of the third parties for the billable events at their respective computer devices. In the process or thread, the billing server 16 receives a request to generate billing for the billable events of the wireless devices 12,18,20,22, as shown at step 110. Then the billing server 16 prompts the third party computer devices (servers 30 and 32) to transmit their stored billable event data as shown at step 112, and then a determination is made as to whether the billable event data for each wireless device has been received, as shown at decision 114.

[0033] If the billable event data for a particular wireless device has not been received at decision 114, an error is returned for the billable event retrieval for that wireless device. Otherwise, once all of the billable events for the wireless devices 12,18,20,22 for which the billing information is requested has been obtained, the billing information is generated for the third party billable events, as shown at step 118, and the billing



information is then transmitted to the carrier, as shown at step 120. The embodiment of Fig. 5 assumes that the carrier will ultimately bill the subscriber of the wireless device 12,18,20,22 for all third party services, but step 120 could likewise be transmitting a bill to the subscriber of the wireless device. Then, if so embodied, the billing server effects payment of the third parties for the billable events of the wireless devices 12,18,20,22 at that third parties' computer devices, as shown at step 122, after which the billing generation process terminates.

[0034] It can be seen that the system 10 thus provides a method of billing for third party applications and services provided to the wireless devices 12,18,20,22 of subscribers to a wireless network 14, including the steps of causing a billable event to occur through wireless device 12,18,20,22 interaction with a third party computer device, such as third party application download server 30, aggregating the billable events into billable event data at a billing server, as shown in the steps of Fig. 5, and then billing the appropriate wireless service subscriber for each billable event based upon the billable event data at the billing server 16. The method can include the step of effecting payment of the third party for billable events that occurred at the one or more computer devices of that third party.

[0035] The step of aggregating the billable events into billable data can occur at the billing server 16, or at the third party computer device such that the method further includes a step of transmitting the billable event data to the billing server 16 from the third party computer device, as shown in step 122 of Fig. 5. The step of transmitting the billable event data can alternately be transmitting the bill from the billing server 16 to another computer device on the wireless network 14, such as stand-alone server 32 or another computer device on the carrier network 40. If embodied so as to bill the wireless subscriber, the method can then include the steps of obtaining wireless device subscriber data, such as from wireless device database 34, and then generating a bill at the billing server for a wireless device based upon the billable event data, as shown at step 118 of Fig. 5.

[0036] The step of causing one or more billable events can be causing a billable event through the download of an application from a third party application download server 30 on the wireless network 14 to the wireless device 12,18,20,22, through the execution of an application on the wireless device as shown at decision 94 in Fig. 4, or through access of the wireless device 12,18,20,22 to an application resident on a third party

computer device on the wireless network 14, as shown in Fig. 4. As is shown in Fig. 5, the method can also include the step of prompting the third party computer device from the billing server 16 to transmit billable event data to the billing server 16 to start the billing process.

[0037] In view of the method being executable on the computer platform of a computer device such as billing server 16 or third party computer device (servers 30 and 32), the present invention includes a program resident in a computer readable medium, where the program directs a server or other computer device having a computer platform to perform the steps of the method. The computer readable medium can be the memory of the billing server 16, or can be in a connective database, such as billable event database 28. Further, the computer readable medium can be in a secondary storage media that is loadable onto a wireless device computer platform, such as a magnetic disk or tape, optical disk, hard disk, flash memory, or other storage media as is known in the art.

[0038] In the context of Figs. 4 and 5, the method may be implemented, for example, by operating portion(s) of the wireless network 14 to execute a sequence of machine-readable instructions, such as wireless device computer platform 50, the billing server 16, and third party application download server 30. The instructions can reside in various types of signal-bearing or data storage primary, secondary, or tertiary media. The media may comprise, for example, RAM (not shown) accessible by, or residing within, the components of the wireless network 14. Whether contained in RAM, a diskette, or other secondary storage media, the instructions may be stored on a variety of machine-readable data storage media, such as DASD storage (e.g., a conventional "hard drive" or a RAID array), magnetic tape, electronic read-only memory (e.g., ROM, EPROM, or EEPROM), flash memory cards, an optical storage device (e.g. CD-ROM, WORM, DVD, digital optical tape), paper "punch" cards, or other suitable data storage media including digital and analog transmission media.

[0039] While the foregoing disclosure shows illustrative embodiments of the invention, it should be noted that various changes and modifications could be made herein without departing from the scope of the invention as defined by the appended claims. Furthermore, although elements of the invention may be described or claimed in the singular, the plural is contemplated unless limitation to the singular is explicitly stated.

**CLAIMS**

What is claimed is:

1. A system for providing and billing for third party applications and services to the wireless devices of subscribers to a wireless network, comprising:
  - one or more wireless devices that each selectively communicate with other computer devices across a wireless network, each wireless device further including a computer platform and an end-user thereof who can selectively download and execute software applications on the computer platform;
  - one or more third party computer devices that selectively provide applications and services to the one or more wireless devices across the wireless network, the interaction of the wireless devices with the applications of the third party computer devices causing one or more billable events; and
  - at least one billing server that gathers at least billable event data for the billable events from wireless device interaction with the one or more third party computer devices, and the billing server effecting payment of a third party for the billable events of the applications and services of that third party.
2. The system of claim 1, wherein the billing server further generates a bill for each wireless device for the billable events of that wireless device.
3. The system of claim 1, wherein the billable event data is gathered only at the billing server.
4. The system of claim 1, wherein the billing server further generates a bill for each wireless device based upon the gathered billable event data.
5. The system of claim 4, wherein the generated bill is transmitted from the billing server to the network carrier.

6. The system of claim 1, wherein the billable event is the download to the wireless device computer platform of an application from a third party application download server on the wireless network.

7. The system of claim 1, wherein the billable event is the execution of an application on the wireless device.

8. The system of claim 1, wherein the billable event is access to an application resident on a third party computer device.

9. The system of claim 1, wherein the third party computer device gathers billable event data and transmits the gathered billable event data to the billing server.

10. The system of claim 9, wherein the third party computer device transmits billable event data to the billing server upon query from the billing server.

11. A system for providing and billing for third party applications and services on a wireless network, comprising:

a wireless communication means for selectively communicating with other computer devices across a wireless network and selectively downloading and executing software applications;

an application means that selectively provides applications and services to the wireless communication means across the wireless network, the interaction of the wireless communication means devices with the application means causing one or more billable events, and the applications and service provided by a third party; and

a billing means for gathering the billable event data for the billable events and paying the third party for the billable events.

12. A method of billing for third party applications and services provided to the wireless devices of subscribers to a wireless network, comprising the steps of:

causing a billable event to occur through wireless device interaction with a third party computer device;

aggregating the billable events into billable event data at a billing server;

billing the appropriate subscriber for each billable event based upon the billable event data at the billing server; and

effecting payment of the third party for billable events that occurred at the computer devices of that third party.

13. The method of claim 12, wherein step of aggregating the billable events into billable data occurs at a billing server.

14. The method of claim 12, wherein the step of aggregating the billable events into billable data occurs at the third party computer device, and further comprising the step of transmitting the billable event data to the billing server from the third party computer device.

15. The method of claim 12, further comprising the steps of:  
obtaining wireless device subscriber data; and  
generating a bill at the billing server for a wireless device based upon the billable event data.

16. The method of claim 15, further comprising the step of transmitting the bill from the billing server to another computer device on the wireless network.

17. The method of claim 12, wherein the step of causing one or more billable events is causing a billable event through the download of an application from a third party application download server on the wireless network to the wireless device.

18. The method of claim 12, wherein the step of causing one or more billable events is causing a billable event through the execution of an application on the wireless device.

19. The method of claim 12, wherein the step of causing one or more billable events is causing a billable event through access of the wireless device to an application resident on a third party computer device on the wireless network.

20. The method of claim 14, further comprising the step of prompting the third party computer device to transmit billable event data to the billing server.

21. A method of billing for third party applications and services provided to the wireless devices of subscribers to a wireless network, comprising the steps of:

a billable event causation step that occurs through wireless device interaction with a third party computer device;

a billable event data aggregation step of the billable events at a billing server; and

a billing step of the appropriate subscriber for each billable event, the billing step based upon the billable event data at the billing server; and

a payment step of the third party for billable events that occurred at the computer devices of that third party.

22. A server for billing wireless device subscribers for billable events occurring from the wireless device interaction with third party applications and services resident on third party computer devices accessible through a wireless network, the wireless device able to selectively download and execute software applications, and the server further gathering billable event data for the billable events from wireless device interaction with the third party computer devices, and effecting payment of the third party for billable events that occurred at the computer devices of that third party.

23. The server of claim 22, wherein the server further generates a bill for the wireless device for at least the billable events of that wireless device.

24. The server of claim 23, wherein the billing server further generates a bill for a wireless device subscriber based upon the gathered billable event data.

25. The server of claim 24, wherein the generated bill is transmitted from the billing server to another computer device on the wireless network.

26. The server of claim 22, wherein the server receives billable event data from third party computer devices.

27. The server of claim 26, wherein the server further prompts third party computer device to transmits billable event data to the server.

28. A computer program that, when executed by a computer device on a wireless network including one or more wireless devices and third party computer devices, directs the computer device to bill for billable events that occur through wireless device interaction with third party applications and services on third party computer devices, through performing the steps of:

aggregating the billable events into billable event data;

billing the appropriate wireless device subscriber for each billable event based upon the billable event data; and

effecting payment of the third party for billable events that occurred at the computer devices of that third party

29. The program of claim 28, further directing the computer device to perform the step of receiving the billable event data from the third party computer device.

30. The program of claim 28, further directing the computer device to perform the step of receiving wireless device subscriber data.

31. The program of claim 30, further directing the computer device to perform the step of generating a bill for a wireless device based upon the billable event data.

32. The program of claim 31, further directing the computer device to perform the step of transmitting the bill to another computer device on the wireless network.

33. The program of claim 28, further directing the computer device to perform the step of prompting a third party computer device to transmit billable event data.

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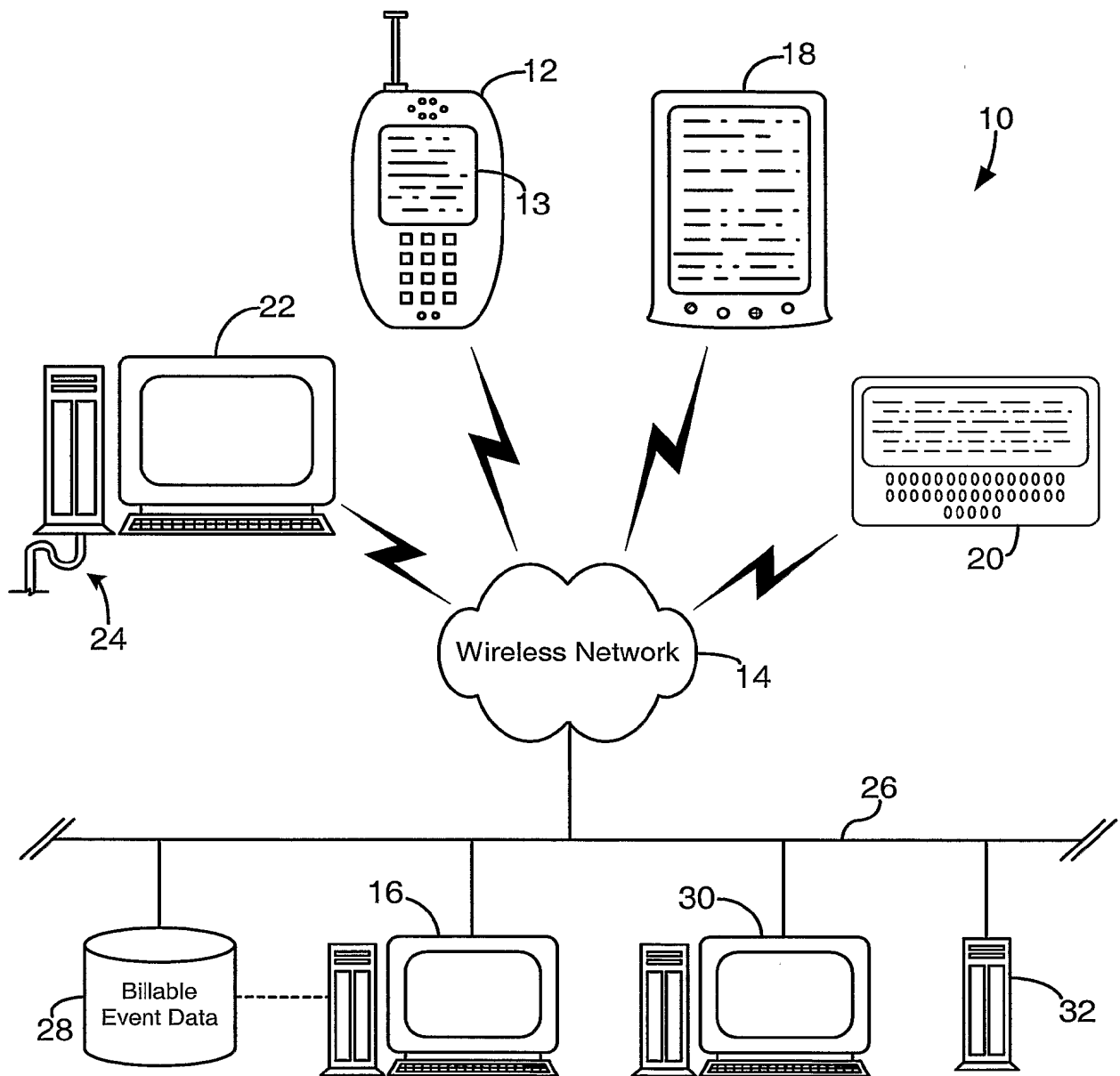


Fig. 1



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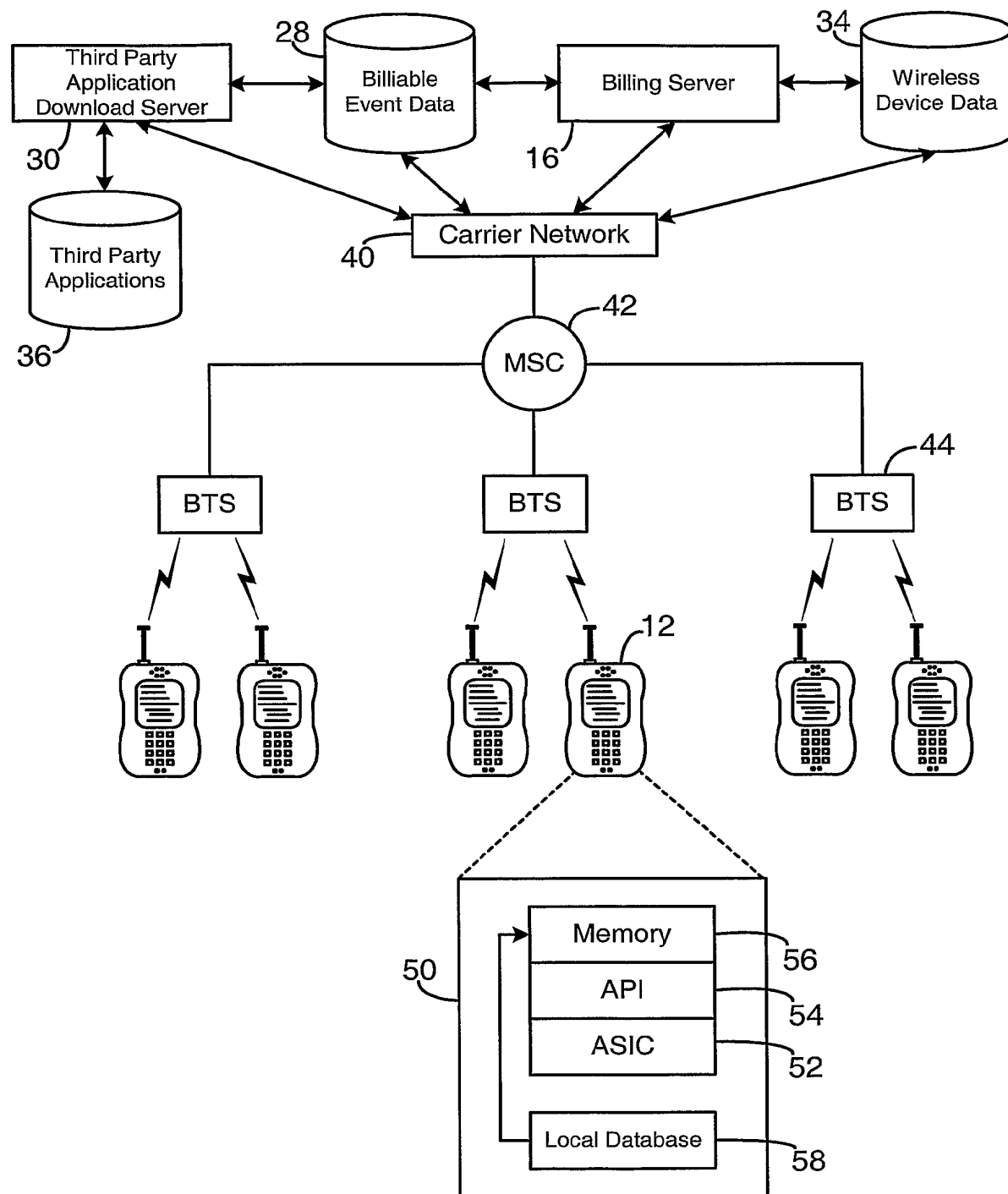


Fig. 2

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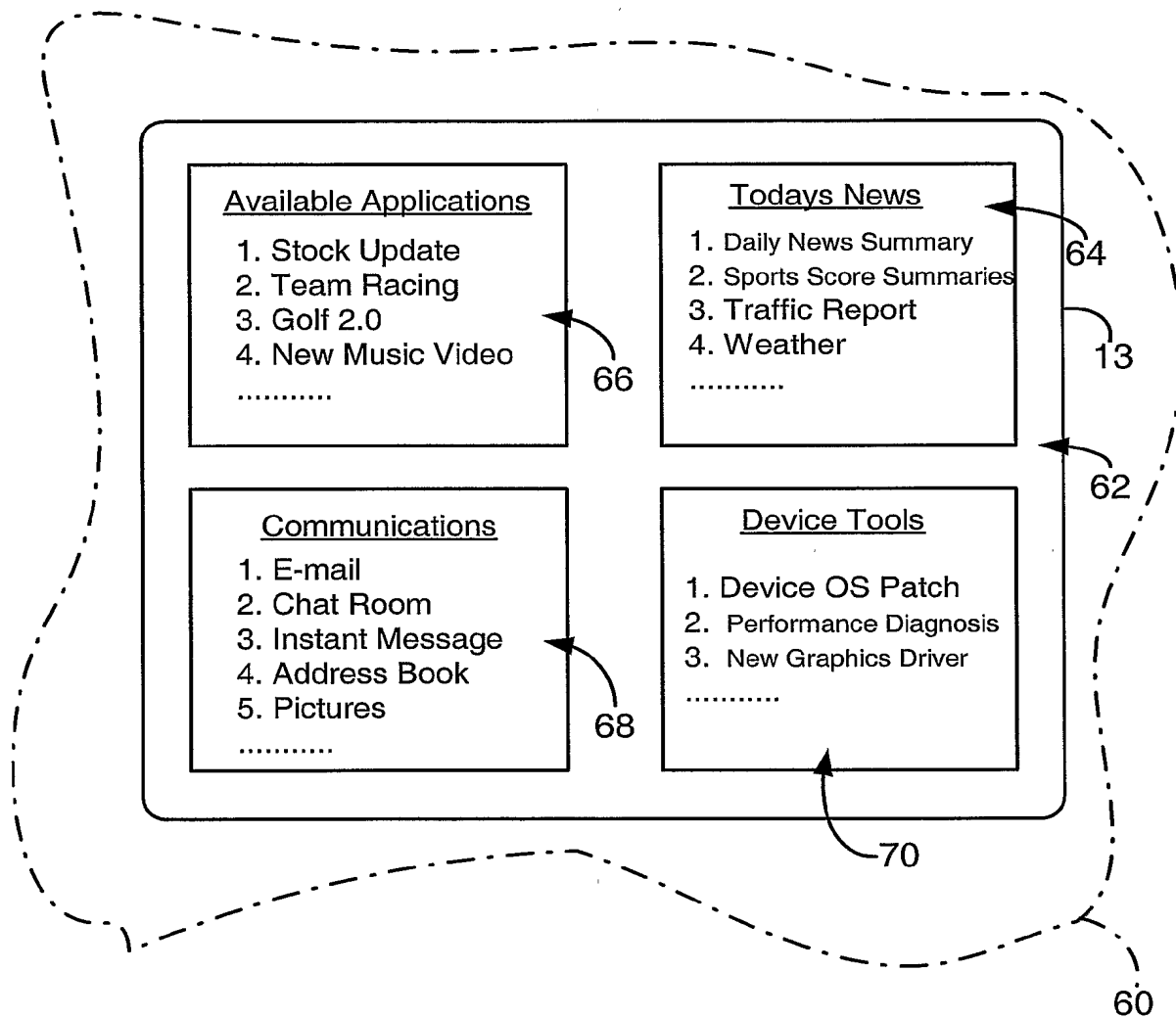


Fig. 3

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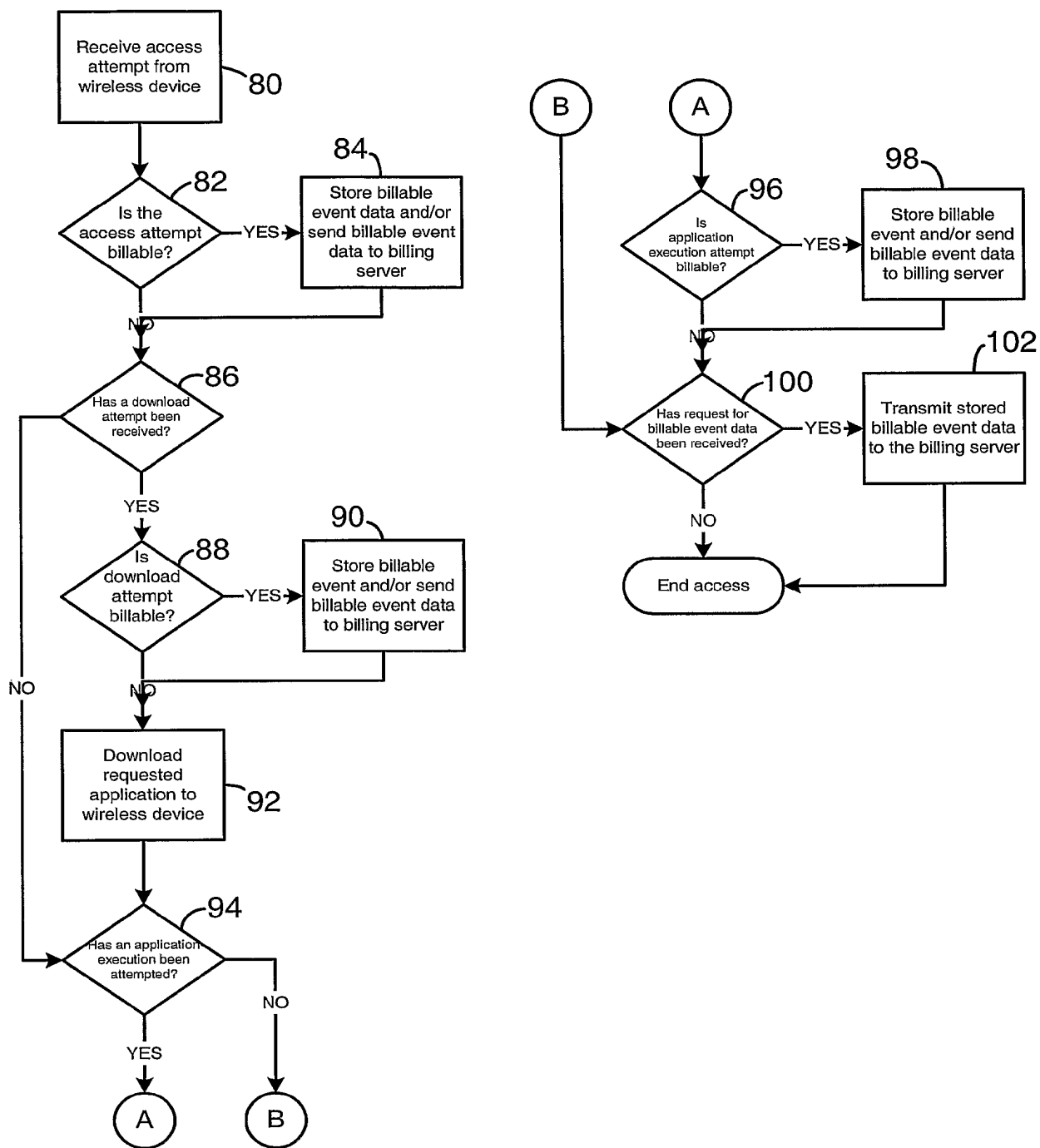


Fig. 4

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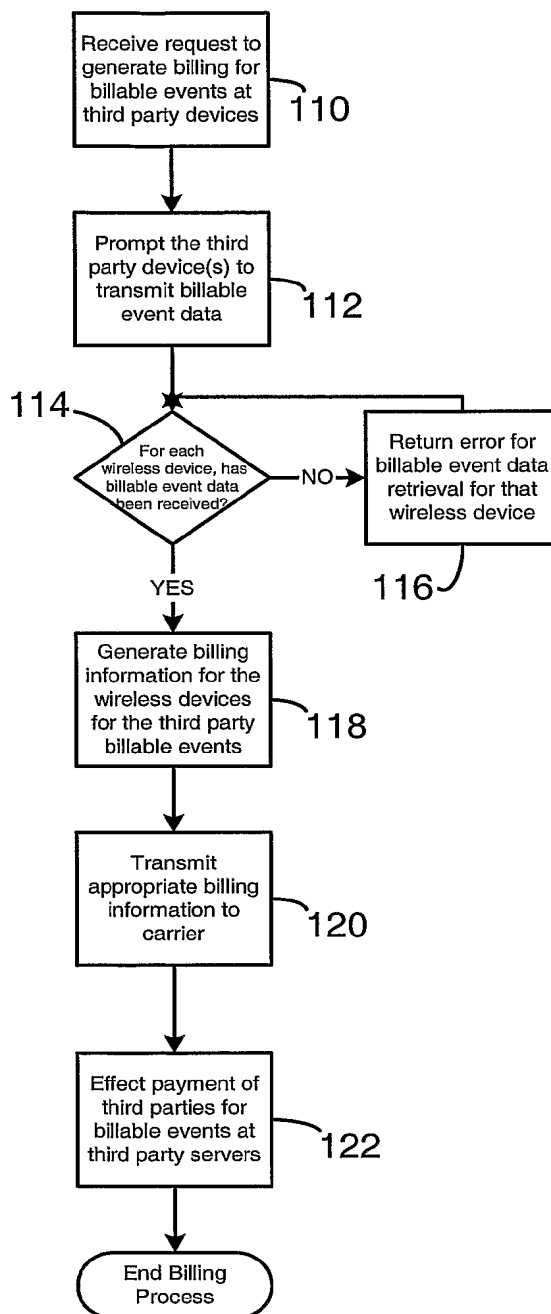


Fig. 5

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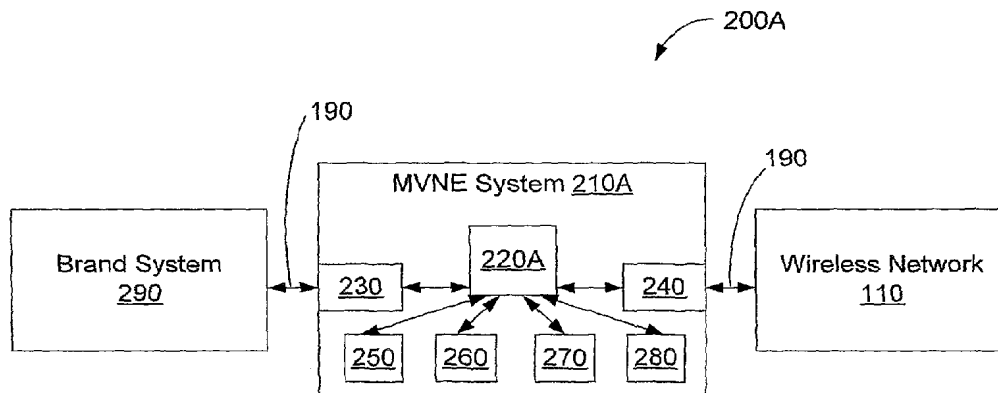
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(54) Title: AN ARCHITECTURE THAT ENABLES A MOBILE VIRTUAL NETWORK OPERATOR (MOVNO) TO CREATE A BRANDED WIRELESS OFFERING



(57) **Abstract:** An architecture is presented that enables a Mobile Virtual Network Operator (MVNO) to create a branded wireless offering. An MVNO-enabler (MVNE) system acts as an intermediary between a brand system and a wireless network. The MVNE system controls customer management, order management, applications management, and billing management. In one embodiment, the MVNE system comprises modules for customer management, order management, applications management, and billing management. In another embodiment, the MVNE system comprises interfaces to third party systems that provide these services. In yet another embodiment, the MVNE system can comprise interfaces to a plurality of brand systems, a plurality of wireless networks, and a plurality of third party systems. By using various interfaces, a customized wireless offering can be created.

**An Architecture that Enables a Mobile Virtual Network Operator (MVNO) to Create a Branded Wireless Offering**

5

**Cross-Reference to Related Applications**

[0001] This application is a continuation-in-part of the following U.S. utility  
10 patent application, which is hereby incorporated by reference: Serial No. 10/xxx,xxx,  
filed on August 16, 2004, entitled "An Architecture that Enables a Mobile Virtual  
Network Operator (MVNO) to Create a Branded Wireless Offering." This application  
also claims priority from the following U.S. provisional patent application, which is  
hereby incorporated by reference: Serial No. 60/496,973, filed on August 20, 2003,  
15 entitled "Enabling Private Label Wireless Solutions by Interfacing with Mobile  
Virtual Network Operators and Wireless Carriers and Providing Additional  
Services."

**Background Of The Invention**

***Field of the Invention***

20 [0002] The present invention is related to an architecture that enables a Mobile  
Virtual Network Operator (MVNO) to create a branded wireless offering and, more  
particularly, to a system for enabling an MVNO to create a customized wireless  
offering. Still more particularly, the present invention is directed to a gateway for an  
MVNO.

**Description of the Background Art**

**[0003]** Many companies would like to enter the wireless services market, but there is a high barrier to entry. Technology is needed for customer management, order management, applications management, and billing management. Third-party  
5 interfaces are needed in order to outsource certain services, such as customer care and distribution and fulfillment. Subscriber interfaces are needed, such as call centers and web portals.

**[0004]** Even more significant is the fact that wireless carriers must provide a nationwide cellular network, voice and data transport, management of the North  
10 American numbering plan, and standard (raw) Call Detail Record (CDR) feeds to input into a billing system. Not only are cellular expertise and infrastructure expensive, but the number of subscribers required in order to operate profitably is several million.

**[0005]** In response, new players have emerged in the wireless market. They  
15 are known as Mobile Virtual Network Operators (MVNOs). MVNOs offer branded wireless services, including the customer management, order management, applications management, and billing management technology mentioned above. However, MVNOs do not have wireless networks. Instead, MVNOs rely on network operators to provide the underlying equipment and communication capabilities,  
20 interfacing their systems with network operator systems as necessary. In general, each MVNO offers wireless services under a different brand.

**[0006]** While MVNOs do not operate wireless networks, implementing the rest of a branded wireless offering still requires a great deal of time and other resources. MVNOs need to provide subscriber interfaces, third-party interfaces, and technology

for customer management, order management, applications management, and billing management. In addition, these services must be interconnected to provide a complete solution. These costs and complexities prevent many consumer brands from entering the wireless services market and becoming MVNOs.

- 5   **[0007]**       What is needed is a way to handle the above costs and complexities, thereby enabling consumer brands to be MVNOs.

### **Summary Of the Invention**

- [0008]**       The present invention overcomes the limitations of the prior art by providing a system and method that enables a Mobile Virtual Network Operator  
10   (MVNO) to create a branded wireless offering. An MVNO-enabler (MVNE) system acts as an intermediary between a brand system and a wireless network and comprises a brand system interface and a wireless network interface. Together, the MVNE system, brand system, and wireless network provide a branded wireless offering.

- 15   **[0009]**       The MVNE system controls customer management, order management, applications management, and billing management. The MVNE system comprises a gateway and a plurality of adapters for coupling other systems to the gateway. In one embodiment, the MVNE system also comprises modules for customer  
20   management, order management, applications management, and billing management. In another embodiment, the MVNE system comprises interfaces to third party systems that provide these services.

- [0010]**       In another embodiment, the MVNE system enables an MVNO to create a customized wireless offerings for a plurality of brands. In this embodiment, the



MVNE system can comprise interfaces to a plurality of brand systems, a plurality of wireless networks, and a plurality of third party systems. By using various interfaces, a customized wireless offering can be created.

### **Brief Description of the Drawings**

5   **[0011]**       FIG. 1 illustrates a block diagram of a prior art system that provides a branded wireless offering.

**[0012]**       FIG. 2A illustrates a block diagram of a system that provides a branded wireless offering, according to one embodiment of the invention.

10   **[0013]**       FIG. 2B illustrates a block diagram of a system that provides a branded wireless offering, according to another embodiment of the invention.

**[0014]**       FIG. 3 illustrates a block diagram of a system that provides a customizable branded wireless offering, according to one embodiment of the invention.

15   **[0015]**       FIG. 4A illustrates a block diagram of a system that provides a customizable branded wireless offering, according to another embodiment of the invention.

**[0016]**       FIG. 4B illustrates a block diagram of a system that provides a customizable branded wireless offering, according to yet another embodiment of the invention.

20   **[0017]**       FIG. 5 illustrates a block diagram of a system that provides a customizable branded wireless offering, according to one embodiment of the invention.

[0018] The Figures depict a preferred embodiment of the present invention for purposes of illustration only. One skilled in the art will readily recognize from the following discussion that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the invention described herein.

### **Detailed Description of the Embodiments**

[0019] Being an MVNO can help a consumer brand leverage a strong brand, customer base, distribution, marketing, and sometimes also proprietary content to create a unique wireless service offering. Creating a branded wireless offering financially benefits consumer brands by deriving additional value from existing customers, distribution channels, and brand equity. Successful branded offerings will yield consumer brands with a new stream of large, recurring subscriber revenue, a new branded channel for communicating with customers, and a unique means to enhance loyalty programs and deepen customer relationships.

[0020] The existence of MVNOs is also financially beneficial to network operators. MVNOs can dramatically improve subscriber profitability, fill excess network capacity, and provide a highly efficient means to access untapped consumer markets. Through MVNOs, network operators can create a highly profitable wholesale business, improve their return on invested capital, and leverage established brands to reduce customer acquisition expenses.

[0021] FIG. 1 illustrates a block diagram of a prior art system that provides a branded wireless offering. The illustrated embodiment of system 100 includes one

MVNO system 120, one wireless network 110, and a network 190. MVNO system 120 is coupled to wireless network 110 via network 190.

**[0022]** In the illustrated embodiment, wireless network 110 comprises a wireless network, including underlying equipment and communication capabilities.

5 For example, wireless network 110 comprises or interacts with wireless base stations, mobile switching centers, messaging service centers (such as short MSCs and multimedia MSCs), home location registers (HLR), and a wired line carrier. Wireless network 110 enables services such as, for example, provisioning, call detail record (CDR) retrieval, trouble ticketing, coverage, suspension, wireless number portability  
10 (WNP), and operational support systems/business support systems (OSS/BSS) integration. When an MVNO customer uses a wireless device to make a phone call, the call travels through wireless network 110.

**[0023]** In the illustrated embodiment, MVNO system 120 is a computer system that implements the rest of the branded wireless offering (e.g., everything except the  
15 wireless network 110). In one embodiment, MVNO system 120 provides subscriber interfaces and technology for customer management, order management, applications management, and billing management, interconnecting these services to provide a complete solution. In another embodiment, MVNO system 120 also provides marketing, customer acquisition, and branding of the wireless offering.

20 **[0024]** MVNO system 120 can comprise, for example, a single computer or a plurality of interconnected computers. These computers can be general-purpose computers or computers that have been configured to perform the functions described above. MVNO system 120 can also comprise one or more databases to store, for example, customer information, order information, and billing information.

**[0025]** In one embodiment, network 190 is a public network, such as the Internet. In another embodiment, network 190 is a private IP-based Local Area Network (LAN) or Wide Area Network (WAN). The communication links to and from network 190 can be wire line or wireless (i.e., terrestrial- or satellite-based transceivers).

### 1. System for Providing a Branded Wireless Offering

**[0026]** As discussed above, while MVNOs do not operate wireless networks, they still face the costs and complexities of implementing the rest of a branded wireless offering. If MVNOs could outsource some of these costs and complexities, consumer brands would be more likely to enter the wireless services market.

**[0027]** FIG. 2A illustrates a block diagram of a system that provides a branded wireless offering, according to one embodiment of the invention. The illustrated embodiment of system 200A includes one MVNO-enabler (MVNE) system 210A, one brand system 290, one wireless network 110, and a network 190. MVNE system 210A interacts with brand system 290 and wireless network 110, acting as an intermediary between them. MVNE system 210A has two interfaces, 230 and 240, which enable it to interact (via network 190) with brand system 290 and wireless network 110, respectively.

**[0028]** In the illustrated embodiment, brand system 290 is a computer system that provides marketing, customer acquisition, and branding of the wireless offering. Brand system 290 is similar to MVNO 120, except that brand system 290 does not provide technology for customer management, order management, applications

management, and billing management. Instead, these services are provided by MVNE system 210A.

**[0029]** In the illustrated embodiment, MVNE system 210A includes customer management module 250, order management module 260, applications management module 270, and billing management module 280. In the illustrated embodiment, MVNE system 210A also includes a control module 220A, which controls MVNE system 210A and interconnects interfaces 230 and 240 and customer management module 250, order management module 260, applications management module 270, and billing management module 280.

**[0030]** In one embodiment, customer management module 250 controls customer relationship management, including work orders, service orders, trouble tickets, premises management, billing management, loyalty and retention, fraud management, credit management, and contract management. In another embodiment, order management module 260 controls sales, activations, product catalogs, and product campaigns. In yet another embodiment, applications management module 270 controls a messaging framework and an application framework. In yet another embodiment, billing management module 280 controls billing, rating, prepayment, taxation, and revenue assurance.

**[0031]** In the illustrated embodiment, wireless network 110 and network 190 perform similar functions as described above with respect to the embodiment illustrated in FIG. 1.

**[0032]** FIG. 2B illustrates a block diagram of a system that provides a branded wireless offering, according to another embodiment of the invention. The illustrated embodiment of system 200B includes one MVNO-enabler (MVNE) system 210B, one

brand system 290, one wireless network 110, four third party systems 292A, 292B, 292C, 292D, and a network 190. MVNE system 210B interacts with brand system 290, wireless network 110, and third party systems 292, acting as an intermediary between them.

5   **[0033]**        Similar to the embodiment illustrated in FIG. 2A, MVNE system 210B has two interfaces 230 and 240, which enable it to interact with brand system 290 and wireless network 110. In contrast to the embodiment illustrated in FIG. 2A, in this embodiment, MVNE system 210B does not comprise customer management module 250, order management module 260, applications management module 270, and  
10    billing management module 280.

**[0034]**        Instead, these services are provided by third party systems 292. In the illustrated embodiment, third party system 292A provides customer management services, third party system 292B provides order management services, third party system 292C provides applications management services, and third party system  
15    292D provides billing management services. In one embodiment, third party system 292A comprises Siebel Communications™ software from Siebel Systems, Inc. In another embodiment, third party system 292D comprises Infinys™ Geneva™ Rating and Billing software from Convergys Corporation.

**[0035]**        In the illustrated embodiment, MVNE system 210B comprises customer  
20    management interface 295A, order management interface 295B, applications management interface 295C, and billing management interface 295D. In the illustrated embodiment, MVNE system 210B uses interface 295A, 295B, 295C, 295D to communicate, via network 190, with third party systems 292A, 292B, 292C, 292D, respectively. In the illustrated embodiment, MVNE system 210B also includes a

control module 220B, which controls MVNE system 210B and interconnects interfaces 230, 240, 295A, 295B, 295C, and 295D. Control module 220B is similar to control module 220A in that it controls MVNE system 210B and interconnects interfaces 230, 240. However, control module 220B differs from control module 220A in that it  
5 interconnects interfaces 295A, 295B, 295C, and 295D instead of modules 250, 260, 270, 280.

**[0036]** In the illustrated embodiment, brand system 290, wireless network 110, and network 190 perform similar functions as described with respect to the embodiment illustrated in FIG. 2A.

## 10 2. System for Providing a Customizable Branded Wireless Offering

**[0037]** It is beneficial for an MVNE to work with several MVNOs so that the MVNE and MVNOs can take advantage of economies of scale. For example, the MVNE can offer to buy large amounts of airtime from an operator of a wireless network 110 in exchange for obtaining a discounted price. As another example, the  
15 MVNE can service multiple MVNOs using the same software. When savings from these economies of scale are passed on to MVNOs, they can drastically lower the number of subscribers needed by an MVNO to operate profitably, thereby encouraging consumer brands to enter the wireless services market.

**[0038]** The present invention enables an MVNE to offer an MVNO a choice of  
20 services, such as different wireless carriers, different billing providers, and different content providers. In other words, with the present invention, an MVNE can offer customized product and service offerings. For an inflexible MVNE, creating and operating a custom infrastructure to interact with each brand system 290 does not

make financial sense. Therefore, the system of the present invention is particularly advantageous because it enables an MVNE to create customized wireless offerings for brand systems 290. Such a system also enables an MVNE to change aspects of a particular branded wireless offering over time if desired.

5   **[0039]**       FIG. 3 illustrates a block diagram of a system that provides a customizable branded wireless offering, according to one embodiment of the invention. The illustrated embodiment of system 300 includes one MVNE system 310, a plurality of brand systems 290A, 290B, a plurality of wireless networks 110A, 110B, a plurality of third party systems 292A<sub>1</sub>, 292A<sub>2</sub> and a network 190. MVNE  
10   system 310 interacts with brand systems 190, wireless networks 110, and third party systems 292A, acting as an intermediary between them.

**[0040]**       In the illustrated embodiment, MVNE system 310 includes six interfaces, 230A, 230B, 240A, 240B, 295A<sub>1</sub>, and 295A<sub>2</sub>. Brand system interfaces 230A, 230B enable MVNE system 310 to interact with two brand systems 290, 290B.  
15   Although the illustrated embodiment includes two brand system interfaces 230, MVNE system 310 can have any number of brand system interfaces 230.

**[0041]**       Wireless network interfaces 240A, 240B enable MVNE system 310 to interact with two wireless networks 110A, 110B. Third party system interfaces 295A<sub>1</sub>, 295A<sub>2</sub> enable MVNE system 310 to interact with two third party systems 292A<sub>1</sub>,  
20   292A<sub>2</sub>. Although the illustrated embodiment includes two wireless network interfaces 240 and two third party system interfaces 295, MVNE system 310 can have any number of wireless network interfaces 240 and third party system interfaces 295.

**[0042]**       In the illustrated embodiment, MVNE system 310 also includes a control module 320, which controls MVNE system 310 and interconnects interfaces



230A, 230B, 240A, 240B, 295A<sub>1</sub>, 295A<sub>2</sub>. MVNE system 310 also includes (not shown) customer management module 250, order management module 260, applications management module 270, and billing management module 280 (as described above with reference to FIG. 2A) or customer management interface 295A, order  
5 management interface 295B, applications management interface 295C, and billing management interface 295D (as described above with reference to FIG. 2B).

**[0043]** In the illustrated embodiment, brand systems 290, wireless networks 110, and network 190 perform similar functions as described above with respect to the embodiment illustrated in FIG. 2A.

10 **[0044]** Although system 300 includes two brand systems 290, two wireless networks 110, and two third party systems 292A, system 300 can have any number of brand systems 290, wireless networks 110, and third party systems 292A. For example, a branded wireless offering for MVNO A can include one brand system 290A, one wireless network 110A, and one third party system 292A<sub>1</sub> (e.g., a billing  
15 provider). Similarly, a branded wireless offering for MVNO B can include a different brand system 290B, a different wireless network 110B, and a different third party system 292A<sub>2</sub> (e.g., a different billing provider).

**[0045]** If MVNO A wants to offer its customers a choice of wireless networks 110, system 300 can include wireless network 110A and wireless network 110B. If  
20 MVNO A wants a third party to handle customer care, system 300 can include an additional third party 292B (e.g., a customer care provider). If MVNO A wants billing to be handled by MVNE system 310 rather than by a third party, system 300 can exclude third party system 292A<sub>1</sub>. In this embodiment, MVNE system 310 would also include billing management module 280.

**[0046]** FIG. 4A illustrates a block diagram of a system that provides a customizable branded wireless offering, according to another embodiment of the invention. In the illustrated embodiment, system 400A includes one MVNO-enabler (MVNE) system 210A, one brand system 290, one wireless network 110, a network 5 190, and a public switched telephone network (PSTN). Devices that can be coupled with system 400A include, for example, a wireless phone, a landline phone, and a computer.

**[0047]** MVNE system 210A interacts with brand system 290 and wireless network 110, acting as an intermediary between them. MVNE system 210A has two 10 interfaces, 230 and 240 (not shown), which enable it to interact with brand system 290 and wireless network 110, respectively. MVNE system 210A also has a gateway 410, which will be further described below.

**[0048]** In the illustrated embodiment, MVNE system 210A includes a content system, an address verification system, a credit check system, a credit card system, a 15 distribution center system, and a retailer system. The content system stores content that will be sent to the wireless application framework (WAF) system and then presented to the user. The address verification system enables address verifications for customers of various systems. In one embodiment, the address verification system uses payment handler functionality of the billing system. The credit check 20 system enables credit verifications for customer payments. The credit card system performs credit card authorization, settlement, and charge reversal transactions. In one embodiment, the credit card system uses payment handler functionality of the billing system. In one embodiment, the distribution center system integrates with the gateway 410 through APIs defined by the distribution center. In one embodiment,

the retailer system includes two components. The first component is to the retailer points of sale and enables ESN locking/unlocking and PIN activation/deactivation. The second component is for handset and accessory sales.

**[0049]** MVNE system 210A also includes both front-end and back-end

5 components. Front-end components include, for example, a wireless application framework (WAF) and authentication system, a content delivery system, a messaging system, an interactive voice response unit (IVRU), a call center system, a customer relationship management (CRM) application and master customer database (DB), a product catalog system, and a world-wide web/ wireless application protocol (WAP)  
10 and authentication system.

**[0050]** The WAF system facilitates the integration of applications and content into the wireless network 110. In one embodiment, the WAF system enhances and customizes users' experiences based on their locations, messaging capabilities, user profiles, etc. In one embodiment, the WAF system includes a content management  
15 system, a service creation and execution environment, and a presentation layer.

**[0051]** The messaging system handles messages, such as email, SMS, and MMS, sent by and to users and systems. The IVRU interfaces with the CRM application and the gateway 410 and enables users to interact with system 210A. The call center system is used by a call center that answers users' phone calls.

20 **[0052]** The CRM application is used by customer care agents who support sales, provisioning, billing, and marketing transactions. In one embodiment, the CRM application integrates with the gateway 410 using enterprise application integration (EAI) and also integrates with the call center system. In one embodiment, the CRM application comprises Siebel Communications™ software from Siebel

Systems, Inc., including Siebel's Gateway Server, Enterprise Server, Web Engine Server, Application Server, and Database Server. In one embodiment, the CRM system interfaces with the gateway 410 using XML over HTTP and an adapter using the J2EE Connector Architecture (JCA).

5   **[0053]**       The product catalog system includes a database and is used by consumers and providers for sales purposes. The worldwide web/WAP system includes web portals that can be used by consumers, brand system 290 administrators, and MVNE system 210 administrators.

10   **[0054]**       Back-end components include, for example, a personal identification number (PIN) management system, an equipment serial number (ESN) management system, a subscriber identity module (SIM) management system, a short message service (SMS) gateway, a billing/rating and call detail record (CDR) management system, a reporting system, an enterprise resource planning (ERP) taxation system, a bill finishing and printing system, a mediation manager system, a prepaid gateway  
15   system, and a prepaid service control point (SCP) system).

20   **[0055]**       The PIN management system includes a data repository of PINs and applications that manage the lifecycle of the PINs. In one embodiment, the PINs belong to cards that are used for a pre-paid wireless offering. The ESN management system includes a data repository of ESNs for mobile devices (that the MVNE system 210 knows of and allows interaction with) and applications that manage the lifecycle of the ESNs. In one embodiment, the ESN management system also interfaces with retailer systems, brand systems 290, distribution center systems, and the CRM system via the gateway 410. The SIM management system includes a data repository of SIMs and applications that manage the lifecycle of the SIMs. In one embodiment, the

billing system includes an ERP taxation component. In one embodiment, the billing system includes Infinys™ Geneva™ Rating and Billing software from Convergys Corporation.

**[0056]** In the illustrated embodiment, brand system 290, wireless network 110, and network 190 perform similar functions as described above with respect to the embodiment illustrated in FIG. 2A.

**[0057]** FIG. 4B illustrates a block diagram of a system that provides a customizable branded wireless offering, according to yet another embodiment of the invention. In the illustrated embodiment, system 400B includes one MVNE system 210B, one brand system 290, one wireless network 110, a network 190, and a public switched telephone network (PSTN). Devices that can be used to interface with system 400B include, for example, a wireless phone, a landline phone, and a computer.

**[0058]** MVNE system 210B interacts with brand system 290 and wireless network 110, acting as an intermediary between them. Similar to the embodiment illustrated in FIG. 4A, MVNE system 210B has two interfaces 230 and 240 (not shown), which enable it to interact with brand system 290 and wireless network 110, respectively. MVNE system 210B also includes a gateway 410, front-end components and back-end components. In contrast to the embodiment illustrated in FIG. 4A, in this embodiment, MVNE system 210B does not include a content system, an address verification system, a credit check system, a credit card system, a distribution center system, and a retailer system.

**[0059]** Instead, these systems 292 are provided by third parties. In the illustrated embodiment, third party systems 292 include a content system, an address

verification system, a credit check system, a credit card system, a distribution center system, and a retailer system. In the illustrated embodiment, MVNE system 210B also includes third party system interfaces 295 (not shown). Additionally, the gateway 410 is modified from that in FIG. 4A because the gateway 410 include  
5 adapter to connect to the third party systems 292.

**[0060]** FIG. 5 illustrates a block diagram of a system that provides a customizable branded wireless offering, according to one embodiment of the invention. In the illustrated embodiment, system 500 includes one wireless network 110, one brand system 290, one MVNE system 210 and various third party systems  
10 292. In the illustrated embodiment, the MVNE system 210 comprises gateway 410 and various MVNE modules 510. Gateway 410 further includes an adapter services module 520, an application services module 530 and an integration hub 540.

**[0061]** Figure 5 illustrates a hybrid approach different from those of other embodiments. In particular, Figure 5 illustrates how the MVNE system 210 may be  
15 coupled to a plurality of third party systems 292 as well as includes a plurality of MVNE modules 510. Other alternate embodiments would have a similar functionality in the gateway 410 modified to match the number of third party systems 292 and MVNE modules 510. For example similar to FIG. 4A, in a first alternate embodiment (not shown), no third party systems 292 are needed or coupled to the  
20 gateway 410, but rather all the functionality would be handled by separate MVNE modules 510. In such a case, the adapter services module 520 does not have adapters for third party system 292. In contrast in a second alternate embodiment, the MVNE system 210 could have no MVNE modules 510, but instead rely on third party systems 292 for all the functionality. In such a case, the adapter services module 520

has several adapters, one for each third party system 292 to which the gateway 410 couples. Those skilled in the art will recognize that any of the front-end components and back-end components can each be either in MVNE system 210 (as MVNE modules 210) or third party systems 292, depending on the MVNO's desires. Thus, the MVNE system 210 of the present invention provides the maximum flexibility to configure the system 500 and include functionality as desired.

**[0062]** A key component of the gateway 410 is the integration hub 540. The integration hub 540 forms the backbone of the MNVE system 210 architecture. The integration hub 540 is coupled to various third party systems 292 and MVNE modules 510 and in one manner or the other and it encompass numerous interrelated functions. The integration hub 540 includes a set of interconnected functions for communication with the various third party systems 292 and MVNE modules 510. The integration hub 540 is coupled to the application services module 530 for implementation of areas that relate business components whose implementation may be coupled with Workflow. The integration hub 540 is coupled to the adapter services module 520 for implementation of areas that relate to service components and involves inter-component messaging. The integration hub 540 may also be coupled to receive and process user interaction. The integration hub 540 also facilitates the free flow of data by allowing data to be converted into a universal form by the adapter services module 520. The conversion format is, in theory, "independent" of the application services module 530 that has components/applications that are passing data between themselves. The independent form is known preferably a canonical form. In one embodiment, the

application that is considered to hold the master data will describe the prototype of the canonical form.

**[0063]** The adapter services module 520 is provided to facilitate the integration of 3<sup>rd</sup> party systems 292. The adapter services module 520 includes adapters for various internal and 3<sup>rd</sup> party systems 292 and to integrate seamlessly with them. For example, the adapters include interface technologies such as the following will be used to talk to these external components: MDB wrapper over XML/Http interface, API wrapper over XML/Http interface, EJB wrapper over CORBA, API wrapper over SOAP XML/Http interface, Socket Server for POSA, and API wrapping Stored Procedures.

**[0064]** The application services module 530 is provided to facilitate the creation of interactive services. The application services module 530 provides services to facilitate transactions between all components, overlaid with system workflow. Specifically, at the transaction level, the application services module 530 will offer: transaction persistence, rollbacks, journaling, Error Handling and queuing.

### 3. Additional Embodiments

**[0065]** Any services, such as front-end, back-end, content/media, retail, payment, and equipment distribution, can be handled by an MVNE system 210 or 310, a brand system 290, or a third party system 292, depending on the MVNO's preferences. Front-end services include, for example, marketing, order entry, activation, customer care, lifecycle management, content provision, and bundled offers. Back-end services include, for example, retailer APIs and portals, billing, rating, mediation, reporting, distribution and fulfillment, reverse logistics, bill



presentment, credit checks, finance taxation, and payments. If a third party system 292 is present, it can interface with either the MVNE system 210 or 310 or the brand system 290.

**[0066]** In the above description, for purposes of explanation, numerous specific  
5 details are set forth in order to provide a thorough understanding of the invention. It will be apparent, however, to one skilled in the art that the invention can be practiced without these specific details. In other instances, structures and devices are shown in block diagram form in order to avoid obscuring the invention.

**[0067]** Reference in the specification to “one embodiment” or “an  
10 embodiment” means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the invention. The appearances of the phrase “in one embodiment” in various places in the specification are not necessarily all referring to the same embodiment.

**[0068]** Some portions of the detailed description are presented in terms of  
15 algorithms and symbolic representations of operations on data bits within a computer memory. These algorithmic descriptions and representations are the means used by those skilled in the data processing arts to most effectively convey the substance of their work to others skilled in the art. An algorithm is here, and generally, conceived to be a self-consistent sequence of steps leading to a desired result. The steps are  
20 those requiring physical manipulations of physical quantities. Usually, though not necessarily, these quantities take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared, and otherwise manipulated. It has proven convenient at times, principally for reasons of common usage, to refer to these signals as bits, values, elements, symbols, characters, terms, numbers, or the like.

**[0069]** It should be borne in mind, however, that all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities. Unless specifically stated otherwise as apparent from the discussion, it is appreciated that throughout the description, discussions utilizing terms such as "processing" or "computing" or "calculating" or "determining" or "displaying" or the like, refer to the action and processes of a computer system, or similar electronic computing device, that manipulates and transforms data represented as physical (electronic) quantities within the computer system's registers and memories into other data similarly represented as physical quantities within the computer system memories or registers or other such information storage, transmission or display devices.

**[0070]** The present invention also relates to an apparatus for performing the operations herein. This apparatus may be specially constructed for the required purposes, or it may comprise a general-purpose computer selectively activated or reconfigured by a computer program stored in the computer. Such a computer program may be stored in a computer readable storage medium, such as, but is not limited to, any type of disk including floppy disks, optical disks, CD-ROMs, and magnetic-optical disks, read-only memories (ROMs), random access memories (RAMs), EPROMs, EEPROMs, magnetic or optical cards, or any type of media suitable for storing electronic instructions, and each coupled to a computer system bus.

**[0071]** The algorithms and displays presented herein are not inherently related to any particular computer or other apparatus. Various general-purpose systems may be used with programs in accordance with the teachings herein, or it may prove

convenient to construct more specialized apparatuses to perform the required method steps. The required structure for a variety of these systems appears from the description. In addition, the present invention is not described with reference to any particular programming language. It will be appreciated that a variety of  
5 programming languages may be used to implement the teachings of the invention as described herein.

**[0072]** One skilled in the art will recognize that the particular examples described herein are merely illustrative of representative embodiments of the invention, and that other arrangements, methods, architectures, and configurations  
10 may be implemented without departing from the essential characteristics of the invention. Accordingly, the disclosure of the present invention is intended to be illustrative, but not limiting, of the scope of the invention, which is set forth in the following claims.

**Claims**

WHAT IS CLAIMED IS:

1. A device for providing wireless communication services, comprising:  
an integration hub having an input and an output for enabling communication  
5 between modules;  
a first module having an input and an output for providing adapter services,  
the input and the output of the first module coupled to the  
integration hub; and  
a second module having an input and an output for providing application  
10 services, the input and the output of the second module coupled to  
the integration hub.

2. The device of claim 1, wherein the integration hub includes an  
interconnection function for communication with a third party system.

3. The device of claim 1, wherein the integration hub includes an  
15 interconnection function for communication with an MVNE module.

4. The device of claim 1, wherein the integration hub includes an  
interconnection to receive user input.

5. The device of claim 1, wherein the first module translates data from a  
third party format to a format for the second module.

6. The device of claim 1, wherein the first module translates data from a third party format to a universal format.

7. The device of claim 6, wherein the universal format is a canonical form.

8. The device of claim 1, wherein the first module includes an interface to  
5 communicate with a third party component, and the interface is one from the group of: MDB wrapper over XML/Http interface, API wrapper over XML/Http interface, EJB wrapper over CORBA, API wrapper over SOAP XML/Http interface, Socket Server for POSA, and API wrapping Stored Procedures.

9. The device of claim 1, wherein the second module facilitates the creation  
10 of interactive services.

10. The device of claim 1, wherein the second module provides services to facilitate transactions between an MVNE module and a third party system.

11. The device of claim 1, wherein the second module performs one from the group of transaction persistence, rollbacks, journaling, error handling and  
15 queuing.

12. A system for controlling a mobile virtual network including a branding system and a wireless network, the system comprising:

a gateway having an input and an output for acting as an intermediary and communicating with the branding system and the wireless network,

the gateway coupled to the branding system and the wireless network; and

a first module for performing a function of a mobile virtual network, the first module having an input and an output, the input and output of the first module coupled to the gateway.

13. The system of claim 12 wherein the gateway comprises:  
an integration hub having an input and an output for enabling communication between modules;

an adapter module having an input and an output for providing adapter services, the input and the output of the adapter module coupled to the integration hub; and

an application module having an input and an output for providing application services, the input and the output of the application module coupled to the integration hub.

14. The system of claim 13, wherein the integration hub includes an interconnection function for communication with a third party system.

15. The system of claim 13, wherein the integration hub includes an interconnection function for communication with an MVNE module.

16. The system of claim 13, wherein the adapter module translates data from a third party format to a format for the application module.

17. The system of claim 13, wherein the adapter module translates data from a third party format to a canonical format.

18. The system of claim 16, wherein the adapter module includes an interface to communicate with a third party component, and the interface is one from  
5 the group of: MDB wrapper over XML/Http interface, API wrapper over XML/Http interface, EJB wrapper over CORBA, API wrapper over SOAP XML/Http interface, Socket Server for POSA, and API wrapping Stored Procedures.

19. The system of claim 13, wherein the application module facilitates the creation of interactive services.

10 20. The system of claim 13, wherein the application module performs one from the group of transaction persistence, rollbacks, journaling, error handling and queuing.

21. The system of claim 12, wherein the gateway includes an adapter for enabling communication with a third party system, and wherein the system including  
15 an interface for coupling to a third party system.

22. The system of claim 12, wherein the gateway includes a plurality of adapters, each adapter for enabling communication with a third party system, and wherein the system including a plurality of interfaces for coupling to third party systems.

23. The system of claim 21, wherein the third party system is one from the group of: a content system, a billing system, a verification system, a credit card system, a distribution center and a retailer.

24. The system of claim 12, further comprising a MVNE module having an input and an output for performing a function to support a mobile virtual network, the input and the output of the MVNE module coupled to the gateway.

25. The system of claim 24, wherein the function performed by the MVNE module is one from the group of: billing management, customer management, order management, PIN management, ESN management, SIM management, messaging, payment management, reporting, and prepaid verification.

26. The system of claim 12, further comprising a plurality of MVNE modules having each an input and an output for performing a function to support a mobile virtual network, the input and the output of each MVNE module coupled to the gateway.

27. The system of claim 26, wherein the functions performed by the plurality of MVNE module is a plurality from the group of: billing management, customer management, order management, PIN management, ESN management, SIM management, messaging, payment management, reporting, and prepaid verification.

28. A system for providing wireless communication services, comprising: a first interface module for interacting with a brand system;



a second interface module for interacting with a wireless network; and  
a control module, coupled to the first interface module and the second  
interface module, for controlling the system.

29. The system of claim 28, further comprising a third interface module for  
5 interacting with a first third party system.

30. The system of claim 29, further comprising a fourth interface module for  
interacting with a second third party system.

31. The system of claim 28, further comprising a customer management  
module.

10 32. The system of claim 28, further comprising an order management  
module.

33. The system of claim 28, further comprising an applications management  
module.

15 34. The system of claim 28, further comprising a billing management  
module.

35. A system for providing wireless communication services, comprising:  
a first interface module for interacting with a first brand system  
a second interface module for interacting with a second brand system;  
a third interface module for interacting with a wireless network; and

a control module, coupled to the first interface module, the second interface module, and the third interface module, for controlling the system.

36. The system of claim 35, further comprising a fourth interface module for interacting with a third party system.

5 37. A system for providing wireless communication services, comprising:  
a first interface module for interacting with a first wireless network;  
a second interface module for interacting with a second wireless network;  
a third interface module for interacting with a brand system; and  
a control module, coupled to the first interface module, the second interface  
10 module, and the third interface module, for controlling the system.

38. The system of claim 37, further comprising a fourth interface module for interacting with a third party system.

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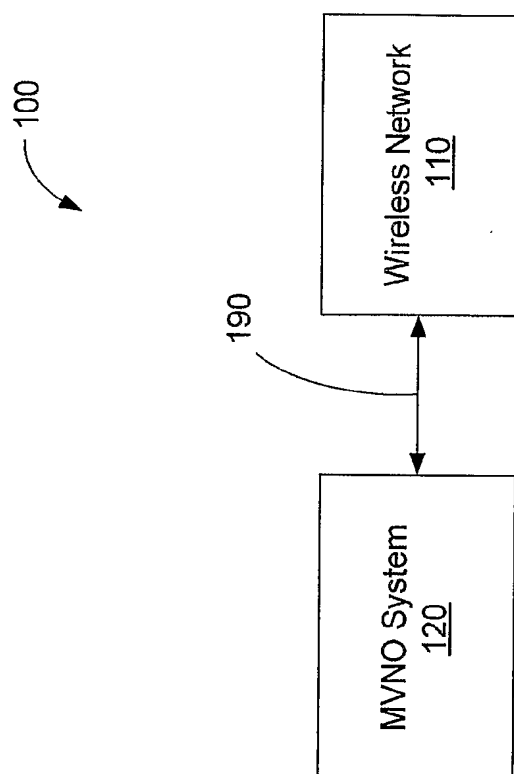


FIG. 1  
(PRIOR ART)

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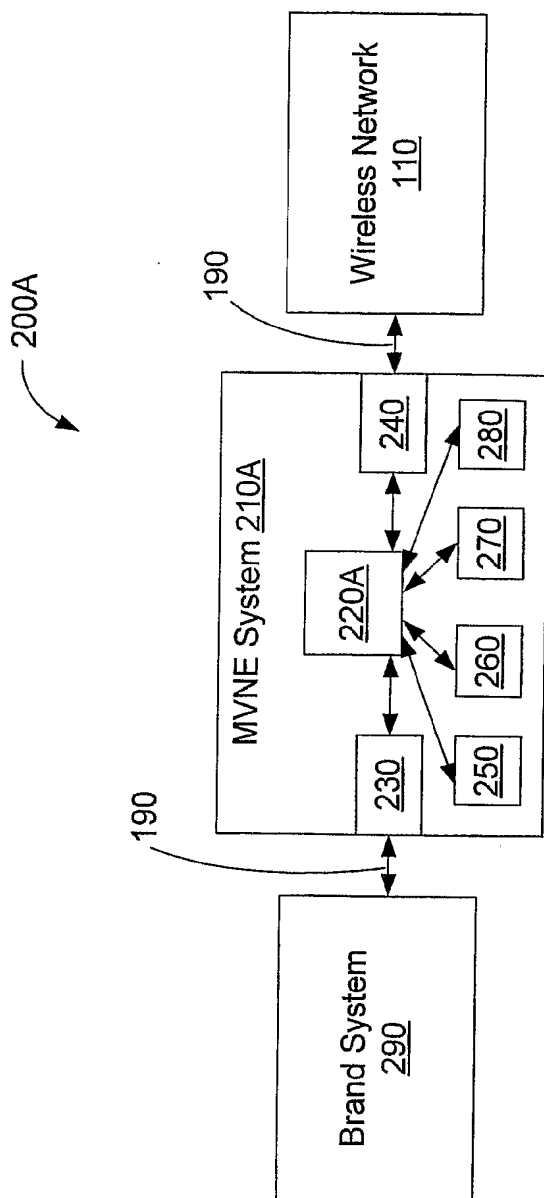


FIG. 2A

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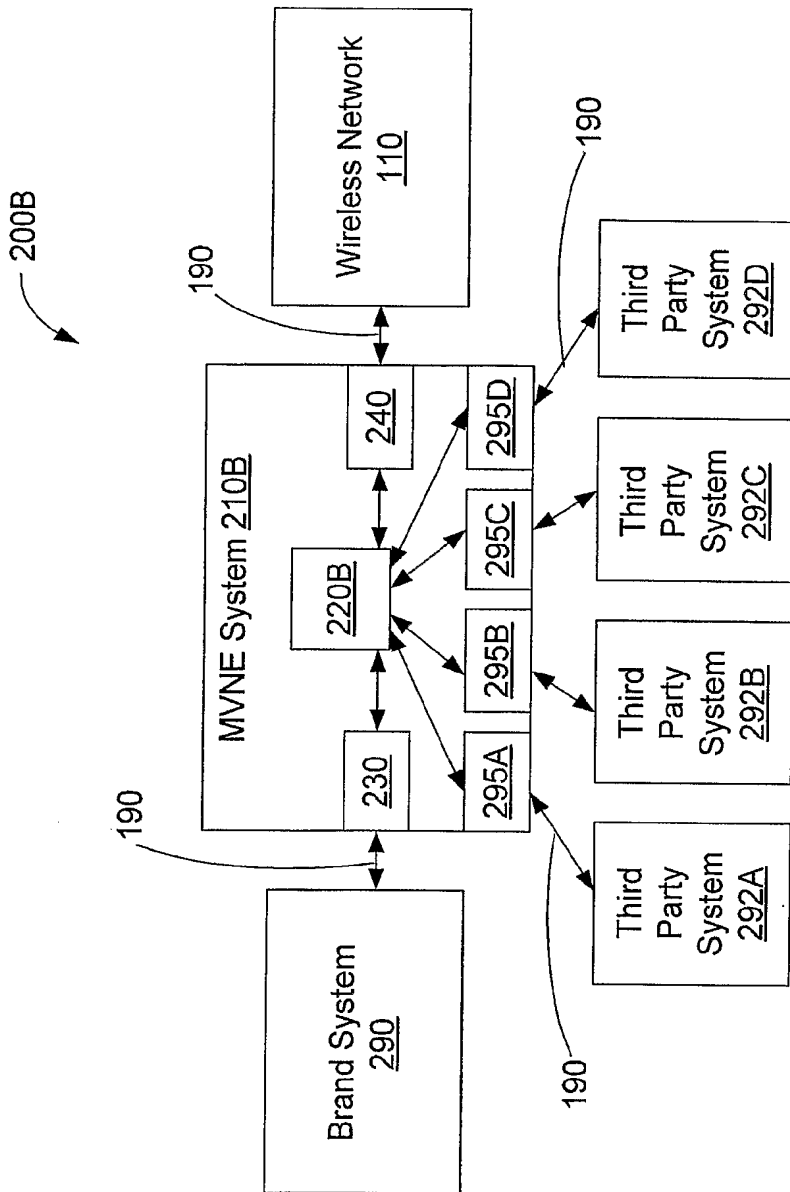


FIG. 2B

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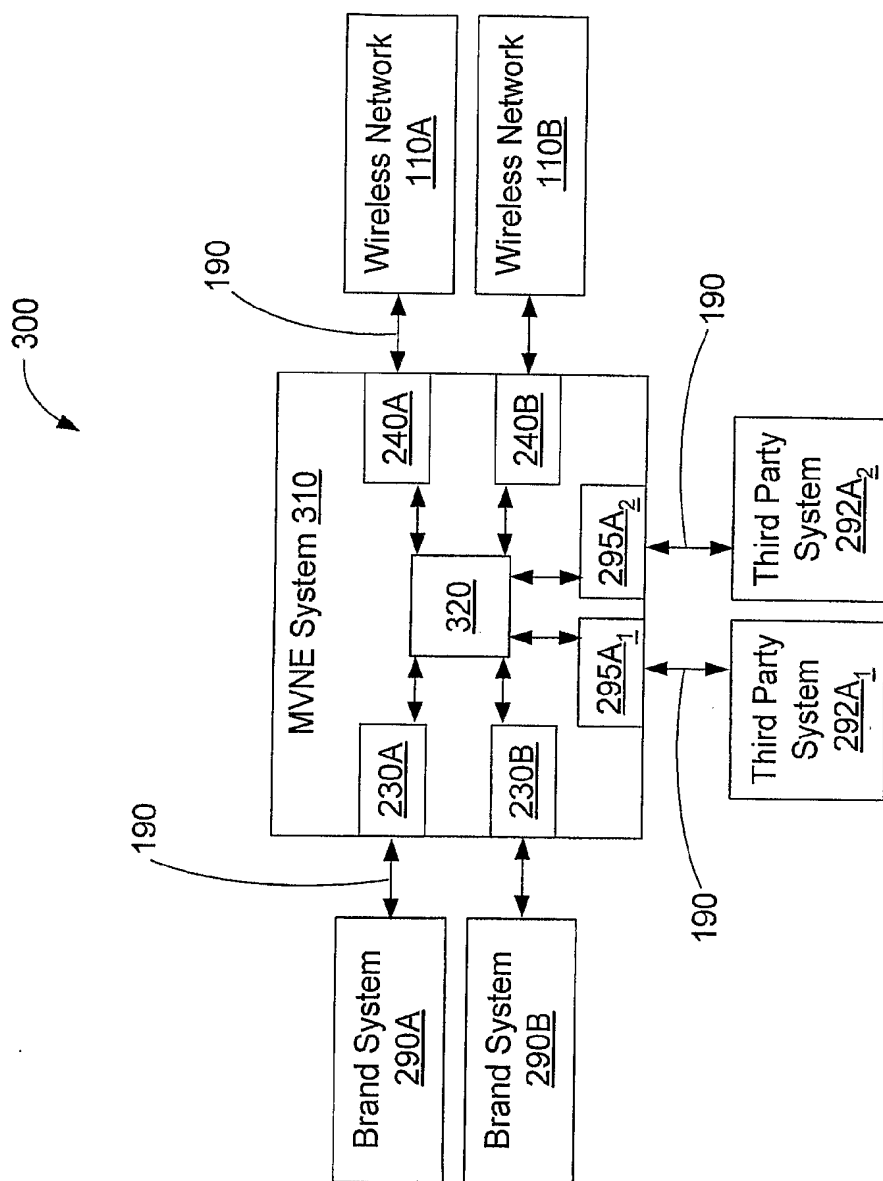


FIG. 3

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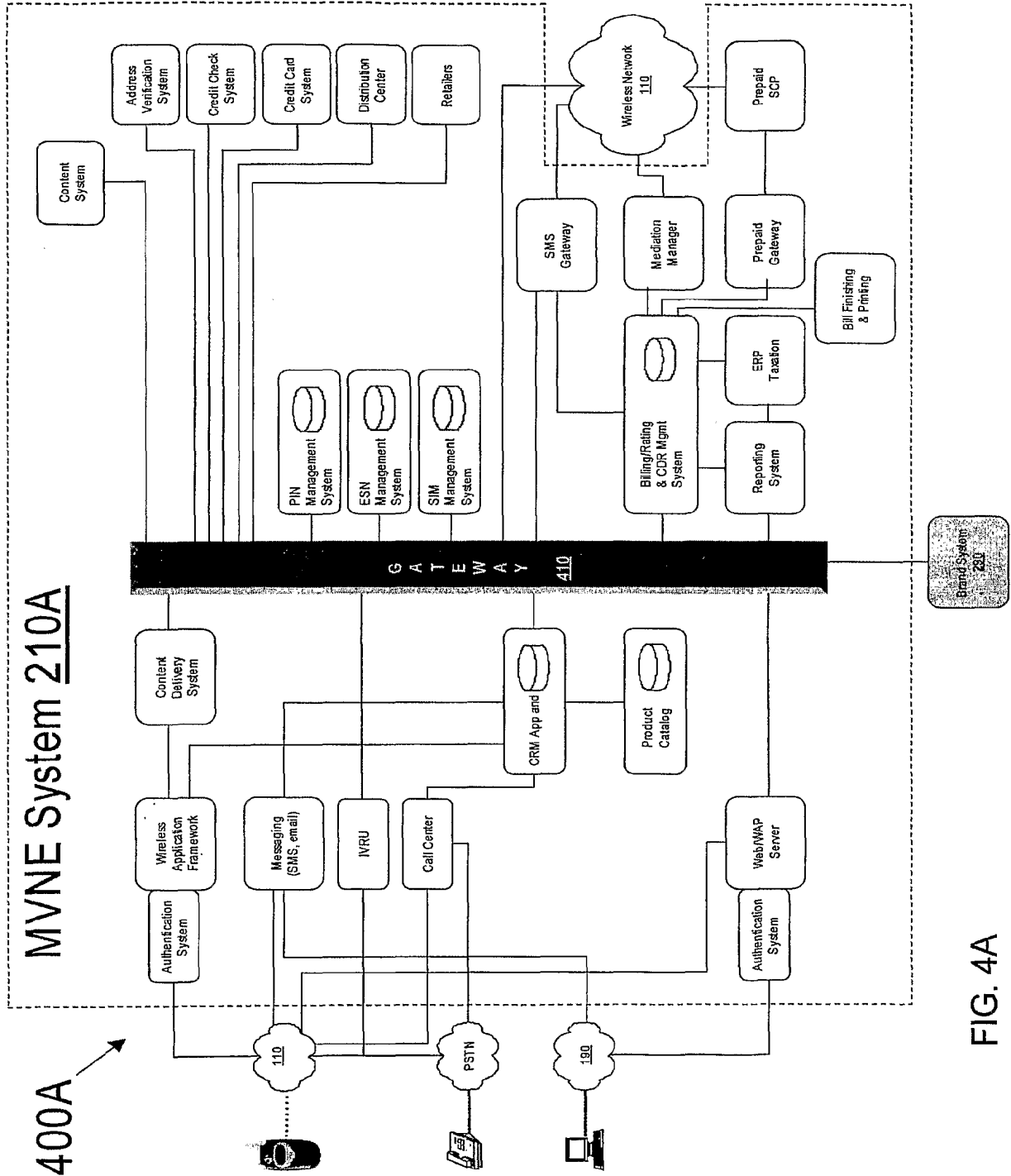


FIG. 4A

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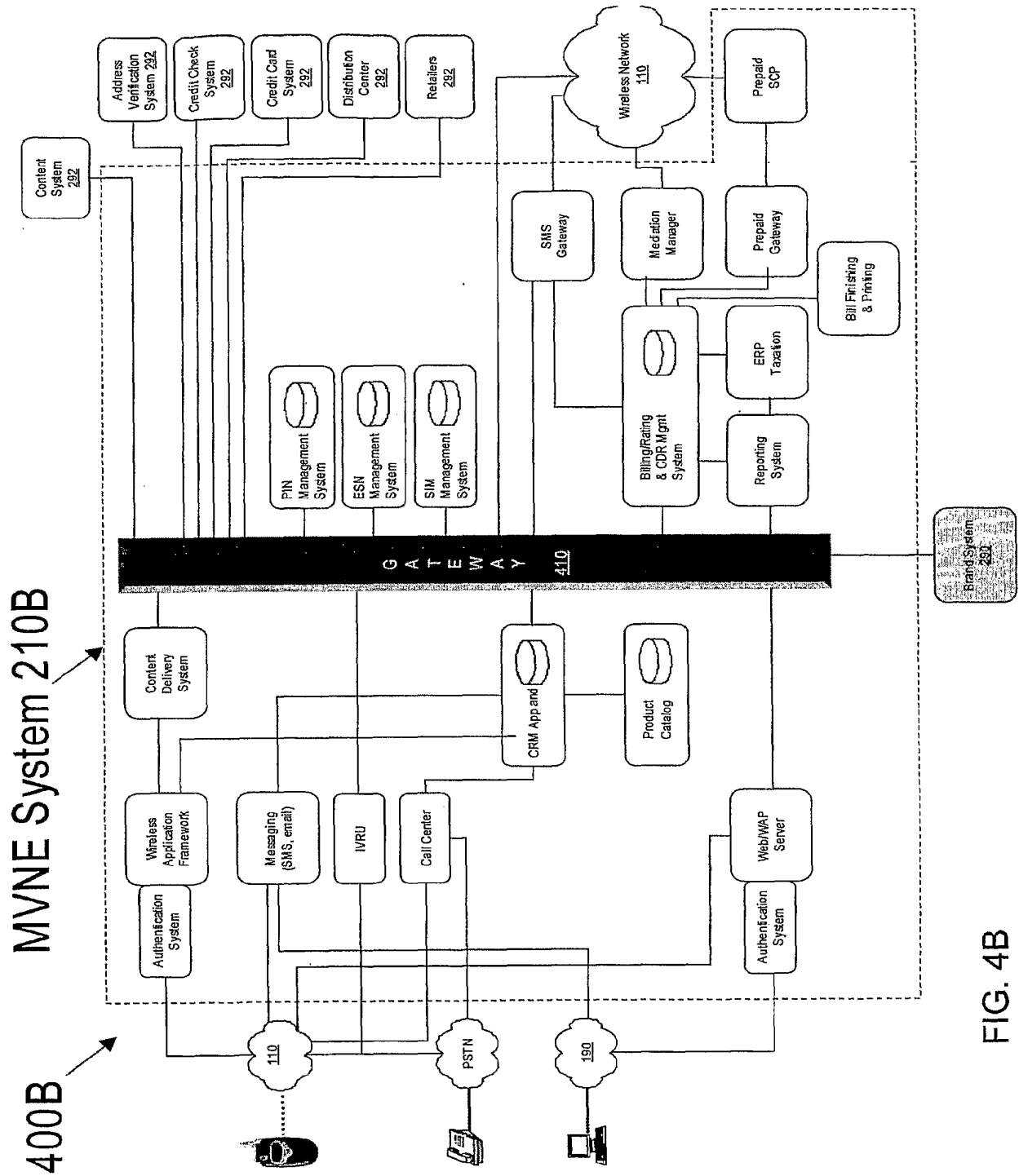


FIG. 4B



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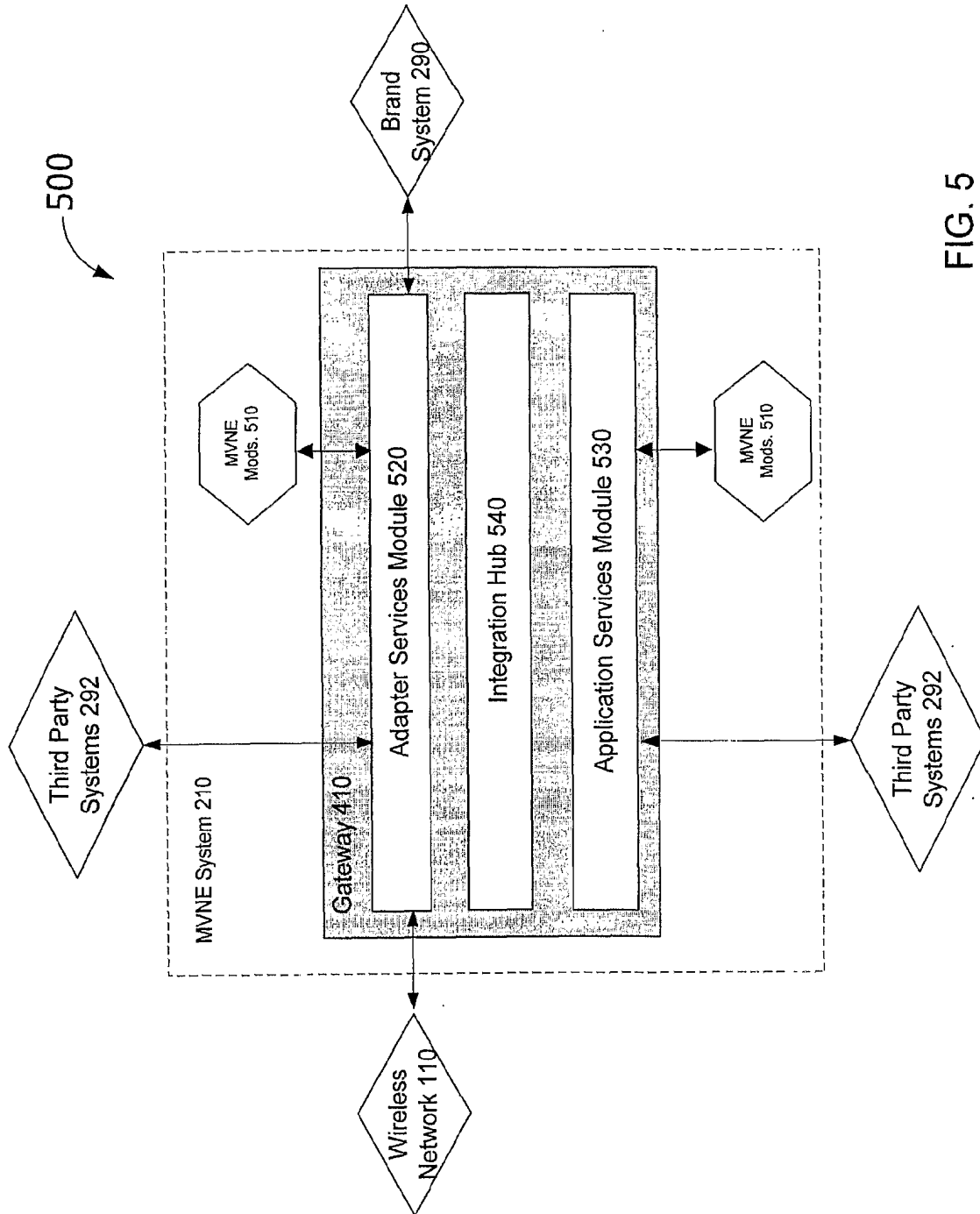


FIG. 5